

# **PART 70 OPERATING PERMIT OFFICE OF AIR QUALITY**

**PQ Corporation  
7<sup>th</sup> Street and Missouri Avenue  
Jeffersonville, Indiana 47130**

(Herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

|                                                                                                                      |                                                                      |
|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Operation Permit No.: T019-7718-00018                                                                                |                                                                      |
| Original signed by Janet G. McCabe<br>Issued by:<br>Janet G. McCabe, Assistant Commissioner<br>Office of Air Quality | Issuance Date: March 28, 2002<br><br>Expiration Date: March 28, 2007 |

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## SECTION A

## SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

### A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)] [326 IAC 2-7-1(22)]

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The Permittee owns and operates a stationary sodium silicate and sodium aluminosilicate manufacturing facility.

|                              |                                                                                                                                                     |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Responsible Official:        | Walter Fasold                                                                                                                                       |
| Source Address:              | 7 <sup>th</sup> Street and Missouri Avenue, Jeffersonville, Indiana 47130                                                                           |
| Mailing Address:             | P.O. Box 669, Jeffersonville, Indiana 47130                                                                                                         |
| General Source Phone Number: | (812) 288-7186                                                                                                                                      |
| SIC Code:                    | 2819                                                                                                                                                |
| County Location:             | Clark                                                                                                                                               |
| Source Location Status:      | Nonattainment for ozone<br>Attainment for all other criteria pollutants                                                                             |
| Source Status:               | Part 70 Permit Program<br>Minor Source, under Emission Offset Rules;<br>Major Source, Section 112 of the Clean Air Act<br>1 of 28 Source Categories |

### A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

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This stationary source consists of the following emission units and pollution control devices:

- (a) Two (2) fire tube boilers (SG-1001 and SG-1002), constructed in 1991, each rated at seventeen and five-tenths (17.5) million British thermal units (MMBtu) per hour and exhausting at one (1) stack, identified as S-2. The boilers are fired by natural gas, No. 2 fuel oil and No. 4 fuel oil.
- (b) One (1) natural gas-fired dryer, constructed in 1991, rated at ten (10) million British thermal units (MMBtu) per hour and exhausting through a baghouse separator at stack S-6. The dryer uses propane as a backup fuel. This dryer is an insignificant source when burning natural gas.
- (c) One (1) melting furnace with a maximum heat input capacity of 19.7 MMBtu per hour, fired by natural gas or fuel oil, and exhausting at stack S-1. The furnace is fired using natural gas, No. 2 fuel oil and No. 4 fuel oil. The furnace was constructed in 1938 and rebuilt in 1998.
- (d) Material storage and handling facilities including:
  - (1) Aluminum trihydrate storage and transfer facilities consisting of one (1) pneumatic conveyor system equipped with a baghouse exhausting at stack S-3; one (1) 400 ton capacity storage silo equipped with a baghouse exhausting at stack S-4; and one (1) weigh bin with a maximum capacity of 12,580 pounds per hour equipped with a baghouse exhausting at stack S-5.

- (2) Sodium silicate storage and transfer facilities consisting of a bucket conveyor system and one (1) 1,400 ton capacity storage silo equipped with a baghouse for particulate control exhausting at stack S-12.
- (3) Sand and soda ash storage and transfer facilities consisting of one (1) 1,500 ton capacity storage silo for sand and one (1) 940 ton capacity storage silo for soda ash, both connected to one (1) baghouse exhausting at stack S-8; two (2) weigh hoppers connected to one (1) baghouse exhausting at stack S-7; and one (1) pneumatic conveying system for the transfer of sand and soda ash from the weigh hoppers to the furnace equipped with a baghouse.
- (4) Sodium aluminosilicate transfer, storage, and loading facilities consisting of a pneumatic conveyor system for transfer to the storage silos, equipped with one (1) baghouse separator for particulate control exhausting at stack S-6; two (2) 625 ton capacity storage silos each equipped with one (1) baghouse for particulate control exhausting at stacks S-9 and S-10; and one (1) pneumatic conveyor system for truck and rail car loading, equipped with a baghouse for particulate control exhausting at stack S-11.

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)]  
[326 IAC 2-7-5(15)]

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This stationary source also includes the following insignificant activities which are specifically regulated, as defined in 326 IAC 2-7-1(21):

- (a) Paved and unpaved roads and parking lots with public access [326 IAC 6-5].
- (b) Degreasing operations that do not exceed 145 gallons per 12 months [326 IAC 8-3-5]
- (c) Other emission units and activities with potential emissions below the threshold in 326 IAC 2-7-1(21):
  - (1) Aluminum trihydrate unloading operations emitting less than five (5) pounds per hour of particulate matter [326 IAC 6-3-2].
  - (2) Sand and soda ash unloading operations emitting less than five (5) pounds per hour of particulate matter [326 IAC 6-3-2].
  - (3) Sodium Silicate unloading operations emitting less than five (5) pounds per hour of particulate matter [326 IAC 6-3-2].

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

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This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

- (a) It is a major source, as defined in 326 IAC 2-7-1(22); and
- (b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

## SECTION B

## GENERAL CONDITIONS

### B.1 Definitions [326 IAC 2-7-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

### B.2 Permit Term [326 IAC 2-7-5(2)] [326 IAC 2-1.1-9.5]

This permit is issued for a fixed term of five (5) years from the original effective date, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date.

### B.3 Enforceability [326 IAC 2-7-7]

Unless otherwise stated, all terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

### B.4 Termination of Right to Operate [326 IAC 2-7-10] [326 IAC 2-7-4(a)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-7-3 and 326 IAC 2-7-4(a).

### B.5 Severability [326 IAC 2-7-5(5)]

The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

### B.6 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]

This permit does not convey any property rights of any sort or any exclusive privilege.

### B.7 Duty to Supplement and Provide Information [326 IAC 2-7-4(b)] [326 IAC 2-7-5(6)(E)] [326 IAC 2-7-6(6)]

- (a) The Permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information to:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

The submittal by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ, may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The submittal by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34). Upon request, the Permittee shall also furnish to IDEM, OAQ, copies of records required to be kept by this permit or, for information claimed to be confidential, the Permittee may furnish such records directly to the U.S. EPA along with a claim of confidentiality [326 IAC 2-7-5(6)(E)].
- (c) The Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1 When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

**B.8 Compliance with Permit Conditions [326 IAC 2-7-5(6)(A)] [326 IAC 2-7-5(6)(B)]**

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- (a) The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit, and is grounds for:
  - (1) Enforcement action;
  - (2) Permit termination, revocation and reissuance, or modification; or
  - (3) Denial of a permit renewal application.
- (b) Noncompliance with any provisions of this permit, except any provision designated as not federally enforceable, constitutes a violation of the Clean Air Act.
- (c) It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- (d) An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.

**B.9 Certification [326 IAC 2-7-4(f)] [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)(C)]**

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- (a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification.
- (c) A responsible official is defined at 326 IAC 2-7-1(34).

**B.10 Annual Compliance Certification [326 IAC 2-7-6(5)]**

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- (a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. The initial certification shall cover the time period from the date of final permit issuance through December 31 of the same year. All subsequent certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in letter form no later than April 15 of each year to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Quality  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

and

United States Environmental Protection Agency, Region V  
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590

- (b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.
- (c) The annual compliance certification report shall include the following:
  - (1) The appropriate identification of each term or condition of this permit that is the basis of the certification;
  - (2) The compliance status;
  - (3) Whether compliance was continuous or intermittent;
  - (4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-7-5(3); and
  - (5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ, may require to determine the compliance status of the source.

The submittal by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

**B.11 Preventive Maintenance Plan [326 IAC 2-7-5(1), (3) and (13)] [326 IAC 2-7-6(1) and (6)] [326 IAC 1-6-3]**

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- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) within ninety (90) days after issuance of this permit, including the following information on each facility:
  - (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
  - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
  - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

The PMP and the PMP extension notification do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) The Permittee shall implement the PMPs as necessary to ensure that failure to implement a PMP does not cause or contribute to a violation of any limitation on emissions or potential to emit.

- (c) A copy of the PMPs shall be submitted to IDEM, OAQ, upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or contributes to any violation. The PMP does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (c) Records of preventive maintenance shall be retained for a period of at least five (5) years. These records shall be kept at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

**B.12 Emergency Provisions [326 IAC 2-7-16]**

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- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.
- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describes the following:
  - (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
  - (2) The permitted facility was at the time being properly operated;
  - (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
  - (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality,  
Compliance Section), or

Telephone Number: 317-233-5674 (ask for Compliance Section)

Facsimile Number: 317-233-5967

- (5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent either by mail or facsimile:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

- (A) A description of the emergency;
- (B) Any steps taken to mitigate the emissions; and
- (C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
- (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.
- (e) IDEM, OAQ, may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4-(c)(10) be revised in response to an emergency.
- (f) Failure to notify IDEM, OAQ, by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.
- (g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

**B.13 Permit Shield [326 IAC 2-7-15][326 IAC 2-7-20] [326 IAC 2-7-12]**

- (a) Pursuant to 326 IAC 2-7-15, the Permittee has been granted a permit shield. The permit shield provides that compliance with the conditions of this permit shall be deemed in compliance with any applicable requirements as of the date of permit issuance, provided that either the applicable requirements are included and specifically identified in this permit or the permit contains an explicit determination or concise summary of a determination that other specifically identified requirements are not applicable. The Indiana statutes from IC13 and rules from 326 IAC, referenced in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation, or standard, except for the requirement to obtain a Part 70 permit under 326 IAC 2-7 or for applicable requirements for which a permit shield has been granted.

This permit shield does not extend to applicable requirements which are promulgated after the date of issuance of this permit unless this permit has been modified to reflect such new requirements.

- (b) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, IDEM, OAQ, shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued. The permit shield shall continue in effect so long as the Permittee is in compliance with the compliance order.

- (c) No permit shield shall apply to any permit term or condition that is determined after issuance of this permit to have been based on erroneous information supplied in the permit application. Erroneous information means information that the Permittee knew to be false, or in the exercise of reasonable care should have been known to be false, at the time the information was submitted.
- (d) Nothing in 326 IAC 2-7-15 or in this permit shall alter or affect the following:
  - (1) The provisions of Section 303 of the Clean Air Act (emergency orders), including the authority of the U.S. EPA under Section 303 of the Clean Air Act;
  - (2) The liability of the Permittee for any violation of applicable requirements prior to or at the time of this permit's issuance;
  - (3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act; and
  - (4) The ability of U.S. EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.
- (e) This permit shield is not applicable to any change made under 326 IAC 2-7-20(b)(2) (Sections 502(b)(10) of the Clean Air Act changes) and 326 IAC 2-7-20(c)(2) (trading based on State Implementation Plan (SIP) provisions).
- (f) This permit shield is not applicable to modifications eligible for group processing until after IDEM, OAQ, has issued the modifications. [326 IAC 2-7-12(c)(7)]
- (g) This permit shield is not applicable to minor Part 70 permit modifications until after IDEM, OAQ, has issued the modification. [326 IAC 2-7-12(b)(7)]

**B.14 Prior Permits Superseded [326 IAC 2-1.1-9.5]**

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- (a) All terms and conditions of previous permits issued pursuant to permitting programs approved into the state implementation plan have been either
  - (1) incorporated as originally stated,
  - (2) revised, or
  - (3) Deletedby this permit.
- (b) All previous registrations and permits are superseded by this permit.

**B.15 Deviations from Permit Requirements and Conditions [326 IAC 2-7-5(3)(C)(ii)]**

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- (a) Deviations from any permit requirements (for emergencies see Section B - Emergency Provisions), the probable cause of such deviations, and any response steps or preventive measures taken shall be reported to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Quality  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

using the attached Quarterly Deviation and Compliance Monitoring Report, or its equivalent. A deviation required to be reported pursuant to an applicable requirement that exists independent of this permit shall be reported according to the schedule stated in the applicable requirement and do not need to be included in this report.

The Quarterly Deviation and Compliance Monitoring Report does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.
- (c) Emergencies shall be included in the Quarterly Deviation and Compliance Monitoring Report.

**B.16 Permit Modification, Reopening, Revocation and Reissuance, or Termination**  
[326 IAC 2-7-5(6)(C)] [326 IAC 2-7-8(a)] [326 IAC 2-7-9]

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- (a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit [326 IAC 2-7-5(6)(C)]. The notification by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ, determines any of the following:
  - (1) That this permit contains a material mistake.
  - (2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.
  - (3) That this permit must be revised or revoked to assure compliance with an applicable requirement [326 IAC 2-7-9(a)(3)].
- (c) Proceedings by IDEM, OAQ, to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable [326 IAC 2-7-9(b)].
- (d) The reopening and revision of this permit, under 326 IAC 2-7-9(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ, at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ, may provide a shorter time period in the case of an emergency [326 IAC 2-7-9(c)].

**B.17 Permit Renewal** [326 IAC 2-7-4]

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- (a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ, and shall include the information specified in 326 IAC 2-7-4. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40). The renewal application does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

- (b) Timely Submittal of Permit Renewal [326 IAC 2-7-4(a)(1)(D)]
  - (1) A timely renewal application is one that is:
    - (A) Submitted at least nine (9) months prior to the date of the expiration of this permit; and
    - (B) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.
  - (2) If IDEM, OAQ, upon receiving a timely and complete permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, including any permit shield provided in 326 IAC 2-7-15, until the renewal permit has been issued or denied.
- (c) Right to Operate After Application for Renewal [326 IAC 2-7-3]  
If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-7 until IDEM, OAQ, takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified in writing by IDEM, OAQ, any additional information identified as being needed to process the application.
- (d) United States Environmental Protection Agency Authority [326 IAC 2-7-8(e)]  
If IDEM, OAQ, fails to act in a timely way on a Part 70 permit renewal, the U.S. EPA may invoke its authority under Section 505(e) of the Clean Air Act to terminate or revoke and reissue a Part 70 permit.

**B.18 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]**

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- (a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.
- (b) Any application requesting an amendment or modification of this permit shall be submitted to:  
  
Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015  
  
Any such application shall be certified by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.19 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)]  
[326 IAC 2-7-12 (b)(2)]

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- (a) No Part 70 permit revision shall be required under any approved economic incentives, marketable Part 70 permits, emissions trading, and other similar programs or processes for changes that are provided for in a Part 70 permit.
- (b) Notwithstanding 326 IAC 2-7-12(b)(1)(D)(i) and 326 IAC 2-7-12(c)(1), minor Part 70 permit modification procedures may be used for Part 70 modifications involving the use of economic incentives, marketable Part 70 permits, emissions trading, and other similar approaches to the extent that such minor Part 70 permit modification procedures are explicitly provided for in the applicable State Implementation Plan (SIP) or in applicable requirements promulgated or approved by the U.S. EPA.

B.20 Operational Flexibility [326 IAC 2-7-20] [326 IAC 2-7-10.5]

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- (a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-7-20(b), (c), or (e), without a prior permit revision, if each of the following conditions is met:
  - (1) The changes are not modifications under any provision of Title I of the Clean Air Act;
  - (2) Any preconstruction approval required by 326 IAC 2-7-10.5 has been obtained;
  - (3) The changes do not result in emissions which exceed the emissions allowable under this permit (whether expressed herein as a rate of emissions or in terms of total emissions);
  - (4) The Permittee notifies the:  
  
Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015  
  
and  
  
United States Environmental Protection Agency, Region V  
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590  
  
in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and
  - (5) The Permittee maintains records on-site which documents, on a rolling five (5) year basis, all such changes and emissions trading that are subject to 326 IAC 2-7-20(b), (c), or (e) and makes such records available, upon reasonable request, for public review.  
  
Such records shall consist of all information required to be submitted to IDEM, OAQ, in the notices specified in 326 IAC 2-7-20(b), (c)(1), and (e)(2).
- (b) The Permittee may make Section 502(b)(10) of the Clean Air Act changes (this term is defined at 326 IAC 2-7-1(36)) without a permit revision, subject to the constraint of 326 IAC 2-7-20(a). For each such Section 502(b)(10) of the Clean Air Act change, the required written notification shall include the following:

- (1) A brief description of the change within the source;
- (2) The date on which the change will occur;
- (3) Any change in emissions; and
- (4) Any permit term or condition that is no longer applicable as a result of the change.

The notification which shall be submitted is not considered an application form, report or compliance certification. Therefore, the notification by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (c) Emission Trades [326 IAC 2-7-20(c)]  
The Permittee may trade increases and decreases in emissions in the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-7-20(c).
- (d) Alternative Operating Scenarios [326 IAC 2-7-20(d)]  
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-7-5(9). No prior notification of IDEM, OAQ, or U.S. EPA is required.

**B.21 Source Modification Requirement [326 IAC 2-7-10.5]**

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A modification, construction, or reconstruction is governed by 326 IAC 2 and 326 IAC 2-7-10.5.

**B.22 Inspection and Entry [326 IAC 2-7-6] [IC 13-14-2-2]**

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Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

- (a) Enter upon the Permittee's premises where a Part 70 source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- (b) have access to copy and any records that must be kept under the conditions of this permit;
- (c) Inspect any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;
- (d) Sample or monitor substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and
- (e) Utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

**B.23 Transfer of Ownership or Operational Control [326 IAC 2-7-11]**

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- (a) The Permittee must comply with the requirements of 326 IAC 2-7-11 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.

- (b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

The application which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

**B.24 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)]**

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- (a) The Permittee shall pay annual fees to IDEM, OAQ, within thirty (30) calendar days of receipt of a billing. Pursuant 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ, the applicable fee is due April 1 of each year.
- (b) Except as provided in 326 IAC 2-7-19(e), failure to pay may result in administrative enforcement action or revocation of this permit.
- (c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-0425 (ask for OAQ, Technical Support and Modeling Section), to determine the appropriate permit fee.

## SECTION C

## SOURCE OPERATION CONDITIONS

|               |
|---------------|
| Entire Source |
|---------------|

### Emission Limitations and Standards [326 IAC 2-7-5(1)]

C.1 Emission Offset Minor Source Status [326 IAC 2-3]

The total source potential to emit NOx is limited to less than 100 tons per year. Therefore, the requirements of 326 IAC 2-3 (Emission Offset) will not apply.

C.2 Particulate Matter Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) pounds per hour [326 IAC 6-3-2(c)]

Pursuant to 326 IAC 6-3-2(c), the allowable particulate matter emissions rate from any process not already regulated by 326 IAC 6-1 or any New Source Performance Standard, and which has a maximum process weight rate less than 100 pounds per hour shall not exceed 0.551 pounds per hour.

C.3 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.4 Open Burning [326 IAC 4-1] [IC 13-17-9]

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1. 326 IAC 4-1-3 (a)(2)(A) and (B) are not federally enforceable.

C.5 Incineration [326 IAC 4-2] [326 IAC 9-1-2]

The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and 326 IAC 9-1-2. 326 IAC 9-1-2 is not federally enforceable.

C.6 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.7 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]

Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be controlled according to the plan to be submitted by the Permittee to IDEM, OAQ within 90 days of issuance of this permit.

C.8 Operation of Equipment [326 IAC 2-7-6(6)]

Except as otherwise provided by statute, rule, or in this permit, all air pollution control equipment listed in this permit and used to comply with an applicable requirement shall be operated at all times that the emission units vented to the control equipment are in operation.

C.9 Stack Height [326 IAC 1-7]

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The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted. The provisions of 326 IAC 1-7-2, 326 IAC 1-7-3(c) and (d), 326 IAC 1-7-4(d) (3), (e), and (f), and 326 IAC 1-7-5 (d) are not federally enforceable.

C.10 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

---

- (a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.
- (b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:
  - (1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or
  - (2) If there is a change in the following:
    - (A) Asbestos removal or demolition start date;
    - (B) Removal or demolition contractor; or
    - (C) Waste disposal site.
- (c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).
- (d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management  
Asbestos Section, Office of Air Quality  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana Licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (e) Procedures for Asbestos Emission Control  
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-4, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.

- (f) Indiana Accredited Asbestos Inspector  
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement that the inspector be accredited, pursuant to the provisions of 40 CFR 61, Subpart M, is federally enforceable.

### **Testing Requirements [326 IAC 2-7-6(1)]**

#### **C.11 Performance Testing [326 IAC 3-6]**

---

- (a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Quality  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ no later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ, if the source submits to IDEM, OAQ, a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

### **Compliance Requirements [326 IAC 2-1.1-11]**

#### **C.12 Compliance Requirements [326 IAC 2-1.1-11]**

---

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

### **Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]**

#### **C.13 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]**

---

Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance. If required by Section D, the Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated within ninety (90) days, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units or emission units added through a source modification shall be implemented when operation begins.

---

C.14 Maintenance of Emission Monitoring Equipment [326 IAC 2-7-5(3)(A)(iii)]

- (a) In the event that a breakdown of the emission monitoring equipment occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem. To the extent practicable, supplemental or intermittent monitoring of the parameter should be implemented at intervals no less frequent than required in Section D of this permit until such time as the monitoring equipment is back in operation. In the case of continuous monitoring, supplemental or intermittent monitoring of the parameter should be implemented at intervals no less often than once an hour until such time as the continuous monitor is back in operation.
- (b) The Permittee shall install, calibrate, quality assure, maintain, and operate all necessary monitors and related equipment. In addition, prompt corrective action shall be initiated whenever indicated.

---

C.15 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60 Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

---

C.16 Pressure Gauge and Other Instrument Specifications [326 IAC 2-1-1-11][326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

- (a) Whenever a condition in this permit requires the measurement of pressure drop across any part of the unit or its control device, the gauge employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ( $\pm 2\%$ ) of full scale reading.
- (b) Whenever a condition in this permit requires measurement of a temperature, flow rate or pH level, the instrument employed shall have a scale such that the expected normal reading shall be no less than twenty (20%) of full scale and be accurate within plus or minus two percent ( $\pm 2\%$ ) of full scale reading.
- (c) The Permittee may request IDEM, OAQ approve the use of a pressure gauge or other instrument that does not meet the above specifications provided the Permittee can demonstrate an alternative pressure gauge or other instrument specification will adequately ensure compliance with permit conditions requiring the measurement of pressure drop or other parameters.

## **Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]**

### **C.17 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]**

Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

- (a) The Permittee shall prepare written emergency reduction plans (ERPs) consistent with safe operating procedures.
- (b) These ERPs shall be submitted for approval to:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

within ninety (90) days after the date of issuance of this permit.

The ERP does require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

- (c) If the ERP is disapproved by IDEM, OAQ, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP.
- (d) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.
- (e) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.
- (f) Upon direct notification by IDEM, OAQ, that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

### **C.18 Risk Management Plan [326 IAC 2-7-5(12)] [40 CFR 68.215]**

If a regulated substance, subject to 40 CFR 68, is present at a source in more than a threshold quantity, 40 CFR 68 is an applicable requirement and the Permittee shall submit:

- (a) A compliance schedule for meeting the requirements of 40 CFR 68); or
- (b) As a part of the annual compliance certification submitted under 326 IAC 2-7-6(5), a certification statement that the source is in compliance with all the requirements of 40 CFR 68, including the registration and submission of a Risk Management Plan (RMP).

All documents submitted pursuant to this condition shall include the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

### **C.19 Compliance Response Plan -Preparation, Implementation, Records, and Reports [326 IAC 2-7-5] [326 IAC 2-7-6]**

- (a) The Permittee is required to prepare a Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. A CRP shall be submitted to IDEM, OAQ upon request. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee, supplemented from time to time by the Permittee, maintained on site, and comprised of:

- (1) Reasonable response steps that may be implemented in the event that a response step is needed pursuant to the requirements of Section D of this permit; and an expected timeframe for taking reasonable response steps.
  - (2) If, at any time, the Permittee takes reasonable response steps that are not set forth in the Permittee's current Compliance Response Plan and the Permittee documents such response in accordance with subsection (e) below, the Permittee shall amend its Compliance Response Plan to include such response steps taken.
- (b) For each compliance monitoring condition of this permit, reasonable response steps shall be taken when indicated by the provisions of that compliance monitoring condition as follows:
  - (1) Reasonable response steps shall be taken as set forth in the Permittee's current Compliance Response Plan; or
  - (2) If none of the reasonable response steps listed in the Compliance Response Plan is applicable or responsive to the excursion, the Permittee shall devise and implement additional response steps as expeditiously as practical. Taking such additional response steps shall not be considered a deviation from this permit so long as the Permittee documents such response steps in accordance with this condition.
  - (3) If the Permittee determines that additional response steps would necessitate that the emissions unit or control device be shut down, the IDEM, OAQ shall be promptly notified of the expected date of the shut down, the status of the applicable compliance monitoring parameter with respect to normal, and the results of the actions taken up to the time of notification.
  - (4) Failure to take reasonable response steps shall constitute a violation of the permit.
- (c) The Permittee is not required to take any further response steps for any of the following reasons:
  - (1) A false reading occurs due to the malfunction of the monitoring equipment and prompt action was taken to correct the monitoring equipment.
  - (2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for a minor permit modification to the permit, and such request has not been denied.
  - (3) An automatic measurement was taken when the process was not operating.
  - (4) The process has already returned or is returning to operating within "normal" parameters and no response steps are required.
- (d) When implementing reasonable steps in response to a compliance monitoring condition, if the Permittee determines that an exceedance of an emission limitation has occurred, the Permittee shall report such deviations pursuant to Section B-Deviations from Permit Requirements and Conditions.

- (e) The Permittee shall record all instances when response steps are taken. In the event of an emergency, the provisions of 326 IAC 2-7-16 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.
- (f) Except as otherwise provided by a rule or provided specifically in Section D, all monitoring as required in Section D shall be performed when the emission unit is operating, except for time necessary to perform quality assurance and maintenance activities.

**C.20 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5]  
[326 IAC 2-7-6]**

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- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.
- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.
- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The documents submitted pursuant to this condition do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

**Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]**

**C.21 Emission Statement [326 IAC 2-7-5(3)(C)(iii)] [326 IAC 2-7-5(7)] [326 IAC 2-7-19(c)]  
[326 IAC 2-6]**

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- (a) The Permittee shall submit an annual emission statement certified pursuant to the requirements of 326 IAC 2-6, that must be received by April 15 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. The annual emission statement shall meet the following requirements:
  - (1) Indicate estimated actual emissions of criteria pollutants from the source, in compliance with 326 IAC 2-6 (Emission Reporting);
  - (2) Indicate estimated actual emissions of other regulated pollutants (as defined by 326 IAC 2-7-1) from the source, for purposes of Part 70 fee assessment.
- (b) The annual emission statement covers the twelve (12) consecutive month time period starting December 1 and ending November 30. The annual emission statement must be submitted to:

Indiana Department of Environmental Management  
Technical Support and Modeling Section, Office of Air Quality  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

The emission statement does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (c) The annual emission statement required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

**C.22 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6]**

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- (a) Records of all required data reports and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

**C.23 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11]**

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- (a) The source shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. The report shall be submitted within thirty (30) days of the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:  
  
Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Quality  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015
- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.
- (d) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. The reports do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (e) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years.

**Stratospheric Ozone Protection**

**C.24 Compliance with 40 CFR 82 and 326 IAC 22-1**

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Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with the standards for recycling and emissions reduction:

- (a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.
- (b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.
- (c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

## SECTION D.1

## FACILITY OPERATION CONDITIONS

### Facility Description [326 IAC 2-7-5(15)]:

- (a) Two (2) fire tube boilers (SG-1001 and SG-1002), constructed in 1991, each rated at seventeen and five-tenths (17.5) million British thermal units (MMBtu) per hour and exhausting at one (1) stack, identified as S-2. The boilers are fired by natural gas, No. 2 fuel oil and No.4 fuel.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

### Emission Limitations and Standards [326 IAC 2-7-5(1)]

#### D.1.1 Particulate Matter Limitation (PM) [326 IAC 6-1-2]

Pursuant to 326 IAC 6-1-2(b)(4)(Nonattainment Area Particulate Limitations for Fossil Fuel Fired Steam Generators; Liquid Fuel) and 326 IAC 6-1-2 (b)(5) (Nonattainment Area Particulate Limitations for Fossil Fuel Fired Steam Generators; Gaseous Fuel), particulate matter emissions from the boilers (SG-1001 and SG-1002) shall be limited to 0.15 pounds per million Btu heat input when fuel oil is burned and 0.01 grains per dry standard cubic foot when natural gas is burned.

#### D.1.2 Nitrogen Oxides (NO<sub>x</sub>)[326 IAC 2-3]

Emissions of nitrogen oxides from the furnace (Section D.3), boilers and dryer (Section D.2) shall be limited to ninety-eight (98) tons per twelve (12) consecutive month period. The input of natural gas and natural gas equivalents to the furnace shall be limited to 180 Mmscf per twelve (12) consecutive month period. For purposes of determining compliance:

- (a) Every gallon of No.2 fuel oil, No. 4 fuel oil or combination of No.2 and No. 4 fuel oils burned in the furnace shall be equivalent to 93.5 cubic feet of natural gas based on nitrogen oxides emissions.
- (b) Every standard cubic foot of natural gas burned in either boiler SG-1001 or SG-1002 is equivalent to burning 0.092 standard cubic feet of natural gas in the furnace based on nitrogen oxides emissions.
- (c) Every gallon of No.2 fuel oil, No.4 fuel oil or combination of No.2 and No.4 fuel oils burned in either boiler SG-1001 or SG-1002 is equivalent to burning 18.33 standard cubic feet of natural gas in the furnace based on nitrogen oxides emissions.
- (d) Every standard cubic foot of natural gas burned in dryer is equivalent to burning 0.092 standard cubic feet of natural gas in the furnace based on nitrogen oxides emissions.

This limit is required to limit the emissions of nitrogen oxides from the entire source to less than one hundred (100) tons per twelve (12) consecutive month period. Compliance with this limit makes 326 IAC 2-3 (Emission Offset) not applicable.

#### D.1.3 Sulfur Dioxide (SO<sub>2</sub>) [326 IAC 7-1.1-1] [326 IAC 12-1][40 CFR 60, Subpart Dc]

Pursuant to 326 IAC 7-1.1 (SO<sub>2</sub> Emissions Limitations) and 40 CFR 60, Subpart Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units):

- (a) The SO<sub>2</sub> emissions from the two (2) 17.5 MMBtu per hour oil-fueled boilers shall not exceed five tenths (0.5) pounds per million Btu heat input; or

- (b) The sulfur content of the fuel oil shall not exceed five-tenths percent (0.5%) by weight.  
[40 CFR 60.42c(d)]

Pursuant to 40 CFR 60 Subpart Dc, the fuel oil sulfur content limit applies at all times, including periods of startup, shutdown, and malfunction.

**D.1.4 Preventive Maintenance Plan [326 IAC 2-7-5(13)]**

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility.

**Compliance Determination Requirements**

**D.1.5 Sulfur Dioxide Emissions and Sulfur Content [326 IAC 12] [326 IAC 7-2] [40 CFR 60, Subpart Dc]**

Pursuant to 40 CFR 60, Subpart Dc, and 326 IAC 7-2, the Permittee shall demonstrate compliance utilizing one of the following options:

- (a) Providing vendor analysis of fuel delivered, if accompanied by a certification; or
- (b) Analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.
  - (1) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and
  - (2) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling.

**Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]**

**D.1.6 Visible Emissions Notations**

- (a) Visible emission notations of the boiler stack exhausts (stack S-2) shall be performed once per shift during normal daylight operations when burning fuel oil. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

## **Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]**

### **D.1.7 Record Keeping Requirements**

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- (a) To document compliance with Condition D.1.2 and D.1.3, the Permittee shall maintain records in accordance with (1) through (6) below. Note that pursuant to 40 CFR 60 Subpart Dc, the fuel oil sulfur limit applies at all times including periods of startup, shutdown, and malfunction.
- (1) Calendar dates covered in the compliance determination period;
  - (2) Actual fuel oil and natural gas usage since last compliance determination period and equivalent sulfur dioxide and NO<sub>x</sub> emissions;
  - (3) To certify compliance when burning natural gas only, the Permittee shall maintain records of fuel used; and  
  
If the fuel supplier certification is used to demonstrate compliance when burning alternate fuels and not determining compliance pursuant to 326 IAC 3-7-4, the following, as a minimum, shall be maintained:
    - (4) Fuel supplier certifications;
    - (5) The name of the fuel supplier; and
    - (6) A statement from the fuel supplier that certifies the sulfur content of the fuel oil.
- The Permittee shall retain records of all recording/monitoring data and support information for a period of five (5) years, or longer if specified elsewhere in this permit, from the date of the monitoring sample, measurement, or report. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit.
- (b) To document compliance with Condition D.1.6, the Permittee shall maintain records of visible emission notations of the boiler stack exhaust once per shift.
- (c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

### **D.1.8 Reporting Requirements**

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- (a) A certification, signed by the responsible official, that certifies all of the fuels combusted during the period. The natural gas-fired boiler certification does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34);
- (b) The natural gas boiler certification shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the six (6) month period being reported.

### **D.1.9 Reporting Requirements for Nitrogen Oxides (NO<sub>x</sub>)**

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A quarterly summary of the information to document compliance with Condition D.1.2 shall be submitted to the address listed in Section C - General Reporting Requirements, using the quarterly reporting form located at the end of this permit, or its equivalent, within thirty (30) days after the end of each quarter being reported. The report submitted by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

## SECTION D.2

## FACILITY OPERATION CONDITIONS

### Facility Description [326 IAC 2-7-5(15)]

- (b) One (1) natural gas-fired dryer, constructed in 1991, rated at ten (10) million British thermal units (MMBtu) per hour and exhausting through a baghouse separator at stack S-6. The dryer uses propane as a backup fuel. This dryer is an insignificant source when burning natural gas.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

### Emission Limitations and Standards [326 IAC 2-7-5(1)]

#### D.2.1 Particulate Matter (PM) [326 IAC 6-1-2(a)]

Pursuant to 326 IAC 6-1-2(a) (Nonattainment Area Particulate Emission Limitations for General Sources), the particulate matter emissions from the dryer shall be limited to 0.03 grains per dry standard cubic foot.

#### D.2.2 Nitrogen Oxides (NOx) [326 IAC 2-3]

Emissions of nitrogen oxides from the furnace (Section D.3), boilers (Section D.1) and dryer shall be limited to ninety-eight (98) tons per twelve (12) consecutive month period. The input of natural gas and natural gas equivalents to the furnace shall be limited to 180 Mmscf per twelve (12) consecutive month period. For purposes of determining compliance:

- (a) Every gallon of No.2 fuel oil, No. 4 fuel oil or combination of No.2 and No. 4 fuel oils burned in the furnace shall be equivalent to 93.5 cubic feet of natural gas based on nitrogen oxides emissions.
- (b) Every standard cubic foot of natural gas burned in either boiler SG-1001 or SG-1002 is equivalent to burning 0.092 standard cubic feet of natural gas in the furnace based on nitrogen oxides emissions.
- (c) Every gallon of No.2 fuel oil, No.4 fuel oil or combination of No.2 and No.4 fuel oils burned in either boiler SG-1001 or SG-1002 is equivalent to burning 18.33 standard cubic feet of natural gas in the furnace based on nitrogen oxides emissions.
- (d) Every standard cubic foot of natural gas burned in dryer is equivalent to burning 0.092 standard cubic feet of natural gas in the furnace based on nitrogen oxides emissions.

This limit is required to limit the emissions of nitrogen oxides from the entire source to less than one hundred (100) tons per twelve (12) consecutive month period. Compliance with this limit makes 326 IAC 2-3 (Emission Offset) not applicable.

### Compliance Determination Requirements

#### D.2.3 Particulate Matter (PM)

Pursuant to CP-019-2014-00018, issued on September 18, 1991, and in order to comply with Condition D.2.1 the baghouse (exhausting to Stack S-6) for PM control shall be in operation and control emissions from the dryer at all times that the dryer is in operation.

## **Recordkeeping and Reporting Requirement [326 IAC 2-7-5(3)][326 IAC 2-7-19]**

### **D.2.4 Record Keeping Requirements**

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To document compliance with Condition D.2.2, the Permittee shall maintain the following records. Records maintained for (a) and (b) below shall be taken monthly and shall be complete and sufficient to establish compliance with the NOx emission limit in Condition D.2.2.

- (a) Calendar dates covered in the compliance determination period; and
- (b) Actual natural gas usage since last compliance determination period.

### **D.2.5 Reporting Requirements for Nitrogen Oxides (NOx)**

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A quarterly summary of the information to document compliance with Condition D.2.2 shall be submitted to the address listed in Section C - General Reporting Requirement, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of each quarter being reported. The report submitted by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1 (34).

## SECTION D.3

## FACILITY OPERATION CONDITIONS

### Facility Description [326 IAC 2-7-5(15)]

- (c) One (1) melting furnace with a maximum heat input capacity of 19.7 MMBtu per hour, fired by natural gas or fuel oil, and exhausting at stack S-1. The furnace is fired using natural gas, No. 2 fuel oil and No. 4 fuel oil. The furnace was constructed in 1938 and rebuilt in 1998.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

### Emission Limitations and Standards [326 IAC 2-7-5(1)]

#### D.3.1 Particulate Matter (PM) [326 IAC 6-1-17]

Pursuant to 326 IAC 6-1-17 (Nonattainment Area Particulate Emissions for Clark County), the particulate matter emissions from the furnace shall be limited to 51.8 tons per year and 1.4 pounds per ton of sodium silicate produced.

#### D.3.2 Nitrogen Oxides (NOx)[326 IAC 2-3]

Emissions of nitrogen oxides from the furnace, boilers (Section D.1) and dryer (Section D.2) shall be limited to ninety-eight (98) tons per twelve (12) consecutive month period. The input of natural gas and natural gas equivalents to the furnace shall be limited to 180 Mmscf per twelve (12) consecutive month period. For purposes of determining compliance:

- (a) Every gallon of No.2 fuel oil, No. 4 fuel oil or combination of No.2 and No. 4 fuel oils burned in the furnace shall be equivalent to 93.5 cubic feet of natural gas based on nitrogen oxides emissions.
- (b) Every standard cubic foot of natural gas burned in either boiler SG-1001 or SG-1002 is equivalent to burning 0.092 standard cubic feet of natural gas in the furnace based on nitrogen oxides emissions.
- (c) Every gallon of No.2 fuel oil, No.4 fuel oil or combination of No.2 and No.4 fuel oils burned in either boiler SG-1001 or SG-1002 is equivalent to burning 18.33 standard cubic feet of natural gas in the furnace based on nitrogen oxides emissions.
- (d) Every standard cubic foot of natural gas burned in dryer is equivalent to burning 0.092 standard cubic feet of natural gas in the furnace based on nitrogen oxides emissions.

This limit is required to limit the emissions of nitrogen oxides from the entire source to less than one hundred (100) tons per twelve (12) consecutive month period. Compliance with this limit makes 326 IAC 2-3 (Emission Offset) not applicable.

#### D.3.3 Nitrogen Oxides (NOx) [326 IAC 10-1]

Pursuant to 326 IAC 10-1, the Permittee shall install, operate and maintain the following Best Available Control Technology (BACT):

- (a) Reduce the amount of excess air in the flame zone of the burners by sealing the burners and furnace box to prevent infiltration of excess air.
- (b) Use long luminous flames to reduce the peak flame temperature and gas residence time at peak temperatures.
- (c) Determine the flame pattern that provides optimal conditions for minimizing NOx emissions.

- (d) The Permittee shall monitor the flame pattern using visual inspections and make necessary adjustments to maintain low NO<sub>x</sub> emissions. The flame patterns will be observed by a trained employee at least once per shift when the furnace is in normal operation. A trained employee is an employee who has worked at the plant for at least one month and has been trained in the appearance and characteristics of a normal flame pattern. The Permittee shall prepare and maintain a Compliance Response Plan (CRP), for periods of abnormal flame patterns. The CRP shall be submitted to IDEM, OAQ upon request and shall be subject to review and approval by IDEM, OAQ. The CRP shall be prepared by the Permittee within ninety (90) days after issuance of this permit. The CRP shall be maintained on site and is comprised of:
- (1) Reasonable response steps that may be implemented in the event that compliance related information indicates that a response step is needed; and
  - (2) A time schedule for taking reasonable response steps including a schedule for devising additional response steps for situations that may not have been predicted.
- (e) The Permittee shall conduct visual inspections of the furnace to ensure integrity of the box and minimize air infiltration. Inspections shall be conducted at least three (3) times each month when the furnace is in operation.
- (f) During normal operation of the furnace, the Permittee shall maintain the crown temperature and oxygen levels in the furnace as follows:

| Fuel        | Crown Temperature Range<br>(°F) | Excess Oxygen Range<br>(%) |
|-------------|---------------------------------|----------------------------|
| Natural Gas | 2200 - 2800                     | 1.0 - 1.6                  |
| Fuel Oil    | 2200 - 2800                     | 1.0 - 3.0                  |

The Permittee shall monitor and record the crown temperature and excess oxygen levels at least once per shift when the furnace is operating normally.

- (g) The NO<sub>x</sub> emissions from the furnace shall not exceed 1,091 lbs/MMscf when burning natural gas and 102 lbs/kgal when burning No. 2 fuel oil, No. 4 fuel oil or a blend of No. 2 and No. 4 fuel oils. These emission limits are necessary to achieve the 40% reduction in NO<sub>x</sub> emissions as required by 326 IAC 10-1.

#### D.3.4 Sulfur Dioxide (SO<sub>2</sub>) [326 IAC 7-1.1-1] [326 IAC 7-2-1]

Pursuant to 326 IAC 7-1.1 (SO<sub>2</sub> Emissions Limitations), the SO<sub>2</sub> emissions from the furnace shall not exceed five-tenths (0.5) pound per million Btu heat input while combusting fuel oil. Pursuant to 326 IAC 7-2-1, compliance shall be demonstrated on a thirty (30) day rolling weighted average. 326 IAC 7-1-1 and 326 IAC 7-2-1 are not federally enforceable. These emission limits are necessary to achieve the 60% reduction in NO<sub>x</sub> emissions as required by 326 IAC 10-1.

#### D.3.5 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility.

### **Compliance Determination Requirements**

#### D.3.6 Sulfur Dioxide Emissions and Sulfur Content [326 IAC 7-1.1-1] [326 IAC 7-2-1]

Compliance with Condition D.3.4 shall be determined utilizing one of the following options:

- (a) Pursuant to 326 IAC 3-7-4, the Permittee shall demonstrate that the sulfur dioxide emissions do not exceed five-tenths (0.5) pound per million Btu heat input by:
  - (1) Providing vendor analysis of fuel delivered, if accompanied by a certification;
  - (2) Analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.
    - (A) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and
    - (B) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling; or
- (b) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the boiler using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6.

A determination of noncompliance pursuant to either of the methods specified in (a) or (b) above shall not be refuted by evidence of compliance pursuant to the other method.

#### **D.3.7 Nitrogen Oxides Emissions**

Compliance with Condition D.3.2 shall be demonstrated within 30 days of the end of each month based on the natural gas and fuel oil usage of the most recent twelve (12) month period.

### **Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]**

#### **D.3.8 Visible Emissions Notations**

- (a) Visible emission notations of the furnace stack exhaust shall be performed once per shift during normal daylight operations while combusting fuel oil. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

### **Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]**

#### **D.3.9 Record Keeping Requirements**

- (a) To document compliance with Conditions D.3.2 and D.3.4, the Permittee shall maintain records in accordance with (1) through (6) below. Records maintained for (1) through (6) shall be taken monthly and shall be complete and sufficient to establish compliance with the SO<sub>2</sub> content and NO<sub>x</sub> emission limits established in Conditions D.3.2 and D.3.3.

- (1) Calendar dates covered in the compliance determination period;
  - (2) Actual fuel oil and natural gas usage since last compliance determination period and equivalent sulfur dioxide and NOx emissions;
  - (3) To certify compliance when burning natural gas only, the Permittee shall maintain records of fuel used.
- (b) If the fuel supplier certification is used to demonstrate compliance when burning alternate fuels and not determining compliance pursuant to 326 IAC 3-7-4, with the sulfur dioxide emission limit, the following, as a minimum, shall be maintained:
  - (1) Fuel supplier certifications;
  - (2) The name of the fuel supplier; and
  - (3) A statement from the fuel supplier that certifies the sulfur content of the fuel oil.
- (c) To document compliance with Condition D.3.3, the Permittee shall maintain records in accordance with (1) through (4) below. The records shall be complete and sufficient to establish compliance with the BACT requirements.
  - (1) Dates and times of flame pattern inspections;
  - (2) Charts or logs of crown temperatures and excess oxygen levels;
  - (3) Dates and times of furnace inspections.
  - (4) For periods of abnormal flame patterns, the time period and actions taken to return the flame patterns to normal.
- (d) To document compliance with Condition D.3.8, the Permittee shall maintain records of visible emission notations of the furnace stack (S-1) exhaust while combusting fuel oil.
- (e) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

#### D.3.10 Reporting Requirements

- (a) A certification, signed by the responsible official, that certifies all of the fuels combusted during period. The natural gas-fired furnace certification does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34);
- (b) The natural gas-fired furnace certification shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the six (6) month period being reported.

#### D.3.11 Reporting Requirements for Nitrogen Oxides (NO<sub>x</sub>)

A quarterly summary of the information to document compliance with Condition D.3.2 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of each quarter being reported. The report submitted by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

## SECTION D.4

## FACILITY OPERATION CONDITIONS

### Facility Description [326 IAC 2-7-5(15)]

(d) Material storage and handling facilities including:

- (1) Aluminum trihydrate storage and transfer facilities consisting of one (1) pneumatic conveyor system equipped with a baghouse exhausting at stack S-3; one (1) 400 ton capacity storage silo equipped with a baghouse exhausting at stack S-4; and one (1) weigh bin with a maximum capacity of 12,580 pounds per hour equipped with a baghouse exhausting at stack S-5.
- (2) Sodium silicate storage and transfer facilities consisting of a bucket conveyor system and one (1) 1,400 ton capacity storage silo equipped with a baghouse for particulate control exhausting at stack S-12.
- (3) Sand and soda ash storage and transfer facilities consisting of one (1) 1,500 ton capacity storage silo for sand and one (1) 940 ton capacity storage silo for soda ash, both connected to one (1) baghouse exhausting at stack S-8; two (2) weigh hoppers connected to one (1) baghouse exhausting at stack S-7; and one (1) pneumatic conveying system for the transfer of sand and soda ash from the weigh hoppers to the furnace equipped with a baghouse.
- (4) Sodium aluminosilicate transfer, storage, and loading facilities consisting of a pneumatic conveyor system for transfer to the storage silos, equipped with one (1) baghouse separator for particulate control exhausting at stack S-6; two (2) 625 ton capacity storage silos each equipped with one (1) baghouse for particulate control exhausting at stacks S-9 and S-10; and one (1) pneumatic conveyor system for truck and rail car loading, equipped with a baghouse for particulate control exhausting at stack S-11.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

### Emission Limitations and Standards [326 IAC 2-7-5(1)]

#### D.4.1 Particulate Matter (PM) [326 IAC 6-1-2(a)]

Pursuant to 326 IAC 6-1-2(a) (Nonattainment Area Particulate Emission Limitations for General Sources), the particulate matter emissions from the storage and conveyance of sand, soda ash, sodium silicate, aluminum trihydrate, and sodium aluminosilicate shall be limited to 0.03 grains per dry standard cubic foot.

### Compliance Determination Requirements

#### D.4.2 Particulate Matter (PM)

Pursuant to OP10-11-89-0224, issued on March 27, 1987, and CP 019-2014-00018, issued on September 18, 1991, and in order to comply with Condition D.4.1, the baghouses (exhausting to Stacks S-3, S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11 and S-12) for PM control shall be in operation and control emissions from the storage and conveyance of sand, soda ash, aluminum trihydrate, sodium silicate, and sodium aluminosilicate at all times that the sodium silicate or sodium aluminosilicate production facilities are in operation.

## **Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]**

### **D.4.3 Visible Emissions Notations**

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- (a) Visible emission notations of stack exhausts S-3, S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11 and S-12 shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

### **D.4.4 Parametric Monitoring**

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The Permittee shall record the total static pressure drop across the baghouses used in conjunction with the storage and conveyance of sand, soda ash, aluminum trihydrate, sodium silicate, and sodium aluminosilicate, at least once per shift when the material storage and conveyance systems are in operation when venting to the atmosphere. When for any one reading, the pressure drop across the baghouses exhausting at stacks S-3, S-4, S-5, S-8, S-9, S-10, S-11, and S-12 is outside the normal range of 3.0 and 6.0 inches of water or a range established during the latest stack test the Permittee shall take reasonable response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports. When for any one reading, the pressure drop across the baghouse exhausting at stack S-6 is outside the normal range - 6.0 and 6.0 inches of water or a range established during the latest stack test the Permittee shall take reasonable response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports. When for any one reading the pressure drop across the baghouse exhausting at stack S-7 is outside the normal range of 0 to 6.0 inches of water or a range established during the latest stack test the Permittee shall take reasonable response steps in accordance with Section C - compliance Response Plan - Preparation, Implementation, Records, and Reports. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge and Other Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

### **D.4.5 Baghouse Inspections**

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An inspection shall be performed each calendar quarter of all bags controlling the material storage and conveyance systems when venting to the atmosphere. A baghouse inspection shall be performed within three months of redirecting vents to the atmosphere and every three months thereafter. Inspections are optional when venting to the indoors. All defective bags shall be replaced.

#### D.4.6 Broken or Failed Bag Detection

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In the event that bag failure has been observed:

- (a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if there are no visible emissions or if the event qualifies as an emergency and the Permittee satisfies the emergency provisions of this permit (Section B - Emergency Provisions). Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C-Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.
- (b) For single compartment baghouses, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

#### **Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]**

#### D.4.7 Record Keeping Requirements

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- (a) To document compliance with Condition D.4.3, the Permittee shall maintain records of visible emission notations of the exhaust from stacks S-3, S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11 and S-12 once per shift.
- (b) To document compliance with Condition D.4.4, the Permittee shall maintain the following:
  - (1) Once per shift records of the following operational parameters during normal operation when venting to the atmosphere:
    - (A) Inlet and outlet differential static pressure; and
    - (B) Cleaning cycle operation
  - (2) Documentation of the dates vents are redirected.
- (c) To document compliance with Conditions D.4.5, the Permittee shall maintain records of the inspections of the baghouse required under Condition D.4. 5 and any resulting bag placement.
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

## SECTION D.5

## FACILITY OPERATION CONDITIONS

### Facility Description [326 IAC 2-7-5(15)]:

- (a) Degreasing operations not exceeding 145 gallons per 12 months [326 IAC 8-3-5].
- (b) Material unloading operations, including:
  - (1) Aluminum trihydrate unloading operations emitting less than five (5) pounds per hour of particulate matter [326 IAC 6-3-2].
  - (2) Sand and soda ash unloading operations emitting less than five (5) pounds per hour of particulate matter [326 IAC 6-3-2].
  - (3) Sodium Silicate unloading operations emitting less than five (5) pounds per hour of particulate matter [326 IAC 6-3-2].

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

#### D.5.1 Particulate Matter (PM) [326 IAC 6-1-2(a)]

Pursuant to 326 IAC 6-1-2(a) (Nonattainment Area Particulate Emission Limitations for General Sources), the particulate matter emissions from the unloading of soda ash, sand, sodium silicate, and aluminum trihydrate shall be limited to 0.03 grains per dry standard cubic foot.

#### D.5.2 Volatile Organic Compounds (VOC) [326 IAC 8-3-2]

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations) for cold cleaning operations existing as of January 1, 1980, located in Clark County and which have potential emissions of one hundred (100) tons or greater per year, the owner or operator shall:

- (a) Equip the cleaner with a cover;
- (b) Equip the cleaner with a facility for draining cleaned parts;
- (c) Close the degreaser cover whenever parts are not being handled in the cleaner;
- (d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;
- (e) Provide a permanent, conspicuous label summarizing the operation requirements;
- (f) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

#### D.5.3 Volatile Organic Compounds (VOC) [326 IAC 8-3-5]

- (a) Pursuant to 326 IAC 8-3-5(a) (Cold Cleaner Degreaser Operation and Control), the owner or operator of a cold cleaner degreaser facility without remote solvent reservoirs, existing as of January 1, 1980, located in Clark, Elkhart, Floyd, Lake, Marion, Porters, or St. Joseph Counties, shall ensure that the following control equipment requirements are met:
  - (1) Equip the degreaser with a cover. The cover must be designed so that it can be easily operated with one(1) hand if:

- (A) The solvent volatility is greater than two (2) kiloPascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pounds per square inch) measured at thirty-eight degrees Celsius (38EC) (one hundred degrees Fahrenheit (100EF));
    - (B) The solvent is agitated; or
    - (C) The solvent is heated.
  - (2) Equip the degreaser with a facility for draining cleaned articles. If the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38EC)(one hundred degrees Fahrenheit (100EF)), then the drainage facility must be internal such that articles are enclosed under the cover while draining. The drainage facility may be external for applications where an internal type cannot fit the cleaning system.
  - (3) Provide a permanent, conspicuous label which lists the operating requirements outlined in subsection (b).
  - (4) The solvent spray, if used, must be a solid, fluid stream and shall be applied at the pressure which does not cause excessive splashing.
  - (5) Equip the degreaser with one (1) of the following control devices if the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty two (32) millimeters of mercury and six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38 EC) (one hundred degrees Fahrenheit (100EF)), or if the solvent is heated to a temperature greater than forty-eight and nine-tenths degrees Celsius (48.9EC) (one hundred twenty degrees Fahrenheit (120EF)):
    - (A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.
    - (B) A water cover when solvent is used is insoluble, and heavier than, water.
    - (C) Other systems of demonstrated equivalent control such as a refrigerated chiller or carbon absorption. Such systems shall be submitted to the U.S. EPA as a SIP revision.
- (b) Pursuant to 325 IAC 8-3-5(b) (Cold Cleaner Degreaser Operation and Control), the owner or operator of a cold cleaning facility, existing as of July 1, 1990, shall ensure the following operating requirements are met:
- (1) Close the cover whenever articles are not being handles in the degreaser.
  - (2) Drain cleaned articles for at least fifteen (15) seconds or until dripping ceases.
  - (3) Store waste solvent only in covered containers and prohibit the disposal or transfer of waste solvent in any manner in which greater than twenty percent (20%) of the waste solvent by weight could evaporate.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE DATA SECTION**

**PART 70 OPERATING PERMIT  
CERTIFICATION**

Source Name: PQ Corporation  
Source Address: 7<sup>th</sup> Street and Missouri Avenue, Jeffersonville, Indiana 47130  
Mailing Address: P.O. Box 669, Jeffersonville, Indiana 47130  
Part 70 Permit No.: T019-7718-00018

**This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.**

Please check what document is being certified:

- 9 Annual Compliance Certification Letter
- 9 Test Result (specify) \_\_\_\_\_
- 9 Report (specify) \_\_\_\_\_
- 9 Notification (specify) \_\_\_\_\_
- 9 Affidavit (specify) \_\_\_\_\_
- 9 Other (specify) \_\_\_\_\_

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Phone:

Date:

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

**Office of Air Quality  
COMPLIANCE DATA SECTION  
100 North Senate Avenue  
P.O. Box 6015  
Indianapolis, Indiana 46206-6015  
Phone: 317-233-5674  
Fax: 317-233-5967**

**PART 70 OPERATING PERMIT  
EMERGENCY OCCURRENCE REPORT**

Source Name: PQ Corporation  
Source Address: 7<sup>th</sup> Street and Missouri Avenue, Jeffersonville, Indiana 47130  
Mailing Address: P.O. Box 669, Jeffersonville, Indiana 47130  
Part 70 Permit No.: T019-7718-00018

**This form consists of 2 pages**

**Page 1 of 2**

- 9** This is an emergency as defined in 326 IAC 2-7-1(12)
- C** The Permittee must notify the Office of Air Quality (OAQ), within four **(4)** business hours (1-800-451-6027 or 317-233-5674, ask for Compliance Section); and
  - C** The Permittee must submit notice in writing or by facsimile within two **(2)** days (Facsimile Number: 317-233-5967), and follow the other requirements of 326 IAC 2-7-16.

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:

Control Equipment:

Permit Condition or Operation Limitation in Permit:

Description of the Emergency:

Describe the cause of the Emergency:

If any of the following are not applicable, mark N/A

**Page 2 of 2**

|                                                                                                                                                                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date/Time Emergency started:                                                                                                                                                                                                                                              |
| Date/Time Emergency was corrected:                                                                                                                                                                                                                                        |
| Was the facility being properly operated at the time of the emergency?    Y    N<br>Describe:                                                                                                                                                                             |
| Type of Pollutants Emitted: TSP, PM-10, SO <sub>2</sub> , VOC, NO <sub>x</sub> , CO, Pb, other:                                                                                                                                                                           |
| Estimated amount of pollutant(s) emitted during emergency:                                                                                                                                                                                                                |
| Describe the steps taken to mitigate the problem:                                                                                                                                                                                                                         |
| Describe the corrective actions/response steps taken:                                                                                                                                                                                                                     |
| Describe the measures taken to minimize emissions:                                                                                                                                                                                                                        |
| If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value: |

Form Completed by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

A certification is not required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE DATA SECTION**

**PART 70 OPERATING PERMIT  
SEMI-ANNUAL NATURAL GAS FIRED BOILER CERTIFICATION**

Source Name: PQ Corporation  
Source Address: 7<sup>th</sup> Street and Missouri Avenue, Jeffersonville, Indiana 47130  
Mailing Address: P.O. Box 669, Jeffersonville, Indiana 47130  
Part 70 Permit No.: T019-7718-00018

|             |                       |
|-------------|-----------------------|
| 9           | Natural Gas Only      |
| 9           | Alternate Fuel burned |
| From: _____ | To: _____             |

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Phone:

Date:

A certification by the responsible official as defined by 326 IAC 2-7-1(34) is required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE DATA SECTION**

**PART 70 OPERATING PERMIT  
SEMI-ANNUAL NATURAL GAS FIRED FURNACE CERTIFICATION**

Source Name: PQ Corporation  
Source Address: 7<sup>th</sup> Street and Missouri Avenue, Jeffersonville, Indiana 47130  
Mailing Address: P.O. Box 669, Jeffersonville, Indiana 47130  
Part 70 Permit No.: T019-7718-00018

|   |                       |           |
|---|-----------------------|-----------|
| 9 | Natural Gas Only      |           |
| 9 | Alternate Fuel burned |           |
|   | From: _____           | To: _____ |

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Phone:

Date:

A certification by the responsible official as defined by 326 IAC 2-7-1(34) is required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE DATA SECTION**

**PART 70 OPERATING PERMIT  
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT**

Source Name: PQ Corporation  
Source Address: 7<sup>th</sup> Street and Missouri Avenue, Jeffersonville, Indiana 47130  
Mailing Address: P.O. Box 669, Jeffersonville, Indiana 47130  
Part 70 Permit No.: T019-7718-00018 Source Name:

Months: \_\_\_\_\_ to \_\_\_\_\_ Year: \_\_\_\_\_

Page 1 of 2

This report is an affirmation that the source has met all the requirements stated in this permit. This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. Deviations that are required to be reported by an applicable requirement shall be reported according to the schedule stated in the applicable requirement and do not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".

9 NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

9 THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

**Permit Requirement** (specify permit condition #)

**Date of Deviation:**

**Duration of Deviation:**

**Number of Deviations:**

**Probable Cause of Deviation:**

**Response Steps Taken:**

**Permit Requirement** (specify permit condition #)

**Date of Deviation:**

**Duration of Deviation:**

**Number of Deviations:**

**Probable Cause of Deviation:**

**Response Steps Taken:**

|                                                        |                               |
|--------------------------------------------------------|-------------------------------|
| <b>Permit Requirement</b> (specify permit condition #) |                               |
| <b>Date of Deviation:</b>                              | <b>Duration of Deviation:</b> |
| <b>Number of Deviations:</b>                           |                               |
| <b>Probable Cause of Deviation:</b>                    |                               |
| <b>Response Steps Taken:</b>                           |                               |

|                                                        |                               |
|--------------------------------------------------------|-------------------------------|
| <b>Permit Requirement</b> (specify permit condition #) |                               |
| <b>Date of Deviation:</b>                              | <b>Duration of Deviation:</b> |
| <b>Number of Deviations:</b>                           |                               |
| <b>Probable Cause of Deviation:</b>                    |                               |
| <b>Response Steps Taken:</b>                           |                               |

|                                                        |                               |
|--------------------------------------------------------|-------------------------------|
| <b>Permit Requirement</b> (specify permit condition #) |                               |
| <b>Date of Deviation:</b>                              | <b>Duration of Deviation:</b> |
| <b>Number of Deviations:</b>                           |                               |
| <b>Probable Cause of Deviation:</b>                    |                               |
| <b>Response Steps Taken:</b>                           |                               |

Form Completed By: \_\_\_\_\_

Title/Position: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE DATA SECTION**

**Part 70 Quarterly Report**

Source Name: PQ Corporation  
Source Address: 7<sup>th</sup> Street and Missouri Avenue, Jeffersonville, Indiana 47130  
Mailing Address: P.O. Box 669, Jeffersonville, Indiana 47130  
Part 70 Permit No.: T019-7718-00018  
Facility: Furnace  
Parameter: NO<sub>x</sub>  
Limit: 180 MMscf of natural gas (or fuel oil equivalent) per twelve (12) consecutive month period.

YEAR: \_\_\_\_\_

| Month   | Column 1                 | Column 2                         | Column 1 + Column 2          |
|---------|--------------------------|----------------------------------|------------------------------|
|         | Fuel Usage<br>This Month | Fuel Usage<br>Previous 11 Months | Fuel Usage<br>12 Month Total |
| Month 1 |                          |                                  |                              |
| Month 2 |                          |                                  |                              |
| Month 3 |                          |                                  |                              |

Notes: (1) Each gallon of No. 2 fuel oil, No. 4 fuel oil or combination of No.2 and No.4 fuel oils burned in the furnace is equivalent to 93.5 scf of natural gas burned in the furnace.  
(2) Each gallon of No. 2 fuel oil, No. 4 fuel oil or combination of No. 2 and No. 4 fuel oils burned in a boiler is equivalent to 18.33 scf of natural gas burned in the furnace.  
(3) Each standard cubic foot of natural gas burned in a boiler is equivalent to 0.092 scf of natural gas burned in the furnace.  
(4) Each standard cubic feet of natural gas burned in the dryer is equivalent to 0.092 scf of natural gas burned in the furnace.

9 No deviation occurred in this quarter.

9 Deviation/s occurred in this quarter.

Deviation has been reported on: \_\_\_\_\_

Submitted by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

Attach a signed certification to complete this report.

## Indiana Department of Environmental Management Office of Air Quality

### Addendum to the Technical Support Document for a Part 70 Operating Permit

Source Name: PQ Corporation - Jeffersonville  
Source Location: 7<sup>th</sup> Street and Missouri Avenue, Jeffersonville, Indiana 47130  
County: Clark  
SIC Code: 2819  
Operation Permit No.: T019-7718-00018  
Permit Reviewer: ERG/AB

On June 23, 2001, the Office of Air Quality (OAQ) had a notice published in the Evening News, Jeffersonville, Indiana, stating that PQ Corporation had applied for a Part 70 Operating Permit to operate a sodium silicate manufacturing plant. The notice also stated that OAQ proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Upon further review, the OAQ has decided to make the following revisions to the permit (bolded language has been added, the language with a line through it has been deleted). The Table Of Contents has been modified to reflect these changes.

1. Visible emissions notations for the boilers are required only when burning fuel oil; hence the following revision has been made to Condition D.1.6:

#### D.1.6 Visible Emissions Notations

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- (a) Visible emission notations of the boiler stack exhausts (stack S-2) shall be performed once per shift during normal daylight operations when **burning fuel oil**~~exhausting to the atmosphere~~. A trained employee shall record whether emissions are normal or abnormal.
  - (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
  - (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
  - (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
  - (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to take Response Steps, shall be considered a violation of this permit.
2. The recordkeeping requirements in Condition D.1.7(a) are required to document compliance with Condition D.1.3 as well as Condition D1.2. For clarification purposes, Condition D.1.7 has been revised as follows:

#### D.1.7 Record Keeping Requirements

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- (a) To document compliance with Condition D.1.2 **and D.1.3**, the Permittee shall maintain records in accordance with (1) through (6) below. Note that pursuant to 40 CFR 60 Subpart Dc, the fuel oil sulfur limit applies at all times including periods of startup, shutdown, and malfunction.
- (1) Calendar dates covered in the compliance determination period;
  - (2) Actual fuel oil and natural gas usage since last compliance determination period and equivalent sulfur dioxide and NOx emissions;
  - (3) To certify compliance when burning natural gas only, the Permittee shall maintain records of fuel used; and

If the fuel supplier certification is used to demonstrate compliance when burning alternate fuels and not determining compliance pursuant to 326 IAC 3-7-4, the following, as a minimum, shall be maintained:

- (4) Fuel supplier certifications;
- (5) The name of the fuel supplier; and
- (6) A statement from the fuel supplier that certifies the sulfur content of the fuel oil.

The Permittee shall retain records of all recording/monitoring data and support information for a period of five (5) years, or longer if specified elsewhere in this permit, from the date of the monitoring sample, measurement, or report. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit.

3. For clarification purposes, the following changes have been made to Condition B.8:

#### B.8 Compliance with Permit Conditions [326 IAC 2-7-5(6)(A)] [326 IAC 2-7-5(6)(B)]

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- (a) The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit, ~~except those specifically designated as not federally enforceable, constitutes a violation of the Clean Air Act~~ and is grounds for:
- (1) Enforcement action;
  - (2) Permit termination, revocation and reissuance, or modification; or
  - (3) Denial of a permit renewal application.
- (b) Noncompliance with any provisions of this permit, except any provision designated as not federally enforceable, constitutes a violation of the Clean Air Act.**
- ~~(b)~~(c) It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- ~~(c)~~(d) An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.

4. For clarification purposes, the language used to express the NO<sub>x</sub> limitation in Conditions D.1.2, D.2.2, and D.3.2 has been revised as follows:

Emissions of nitrogen oxides from the furnace (Section D.3), boilers, and dryer (Section D.2) shall be limited to ninety-eight (98) tons per twelve (12) consecutive months **period.** ~~To comply with this limit, the furnace shall be limited to 180 MMscf of natural gas (or fuel oil equivalent) per twelve (12) consecutive month period. For each gallon of No. 2 fuel oil, No. 4 fuel oil or combination of No. 2 and No. 4 fuel oils burned in the furnace the limit shall be reduced by 93.5 scf. For each standard cubic foot of natural gas burned in a boiler the limit shall be reduced by 0.092 scf. For each gallon of No. 2 fuel oil, No. 4 fuel oil or combination of No. 2 and No. 4 fuel oil burned in a boiler the limit shall be reduced by 18.33 scf. For each standard cubic foot of natural gas burned in the dryer, the limit shall be reduced by 0.092 scf. This limit is required to limit the potential to emit NO<sub>x</sub> from the entire source to less than one hundred (100) tons per twelve (12) consecutive month period.~~ **The input of natural gas and natural gas equivalents to the furnace shall be limited to 180 Mmscf per twelve (12) consecutive month period. For purposes of determining compliance:**

- (a) Every gallon of No.2 fuel oil, No. 4 fuel oil or combination of No.2 and No. 4 fuel oils burned in the furnace shall be equivalent to 93.5 cubic feet of natural gas based on nitrogen oxides emissions.
- (b) Every standard cubic foot of natural gas burned in either boiler SG-1001 or SG-1002 is equivalent to burning 0.092 standard cubic feet of natural gas in the furnace based on nitrogen oxides emissions.
- (c) Every gallon of No.2 fuel oil, No.4 fuel oil or combination of No.2 and No.4 fuel oils burned in either boiler SG-1001 or SG-1002 is equivalent to burning 18.33 standard cubic feet of natural gas in the furnace based on nitrogen oxides emissions.
- (d) Every standard cubic foot of natural gas burned in dryer is equivalent to burning 0.092 standard cubic feet of natural gas in the furnace based on nitrogen oxides emissions.

**This limit is required to limit the emissions of nitrogen oxides from the entire source to less than one hundred (100) tons per twelve (12) consecutive month period.** Compliance with this limit makes 326 IAC 2-3 (Emission Offset) not applicable.

5. IDEM, OAQ has revised Condition D.3.3(d) to include a provision for preparing and maintaining a Compliance Response Plan (CRP) for periods of abnormal flame patterns. The CRP is necessary to ensure compliance with 326 IAC 10-1. The IDEM, OAQ has also clarified that the NO<sub>x</sub> emission limits in Condition D.3.3(g) are necessary to achieve the 60% reduction in NO<sub>x</sub> emissions as required by 326 IAC 10-1.

#### D.3.3 Nitrogen Oxides (NO<sub>x</sub>) [326 IAC 10-1]

Pursuant to 326 IAC 10-1, the Permittee shall install, operate and maintain the following Best Available Control Technology (BACT):

- (a4) Reduce the amount of excess air in the flame zone of the burners by sealing the burners and furnace box to prevent infiltration of excess air.
- (b2) Use long luminous flames to reduce the peak flame temperature and gas residence time at peak temperatures.
- (c3) Determine the flame pattern that provides optimal conditions for minimizing NO<sub>x</sub> emissions.

**(d4)** The Permittee shall monitor the flame pattern using visual inspections and make necessary adjustments to maintain low NO<sub>x</sub> emissions. The flame patterns will be observed by a trained employee at least once per shift when the furnace is in normal operation. A trained employee is an employee who has worked at the plant for at least one month and has been trained in the appearance and characteristics of a normal flame pattern. **The Permittee shall prepare and maintain a Compliance Response Plan (CRP), for periods of abnormal flame patterns. The CRP shall be submitted to IDEM, OAQ upon request and shall be subject to review and approval by IDEM, OAQ. The CRP shall be prepared by the Permittee within ninety (90) days after issuance of this permit. The CRP shall be maintained on site and is comprised of:**

- (1) Reasonable response steps that may be implemented in the event that compliance related information indicates that a response step is needed; and**
- (2) A time schedule for taking reasonable response steps including a schedule for devising additional response steps for situations that may not have been predicted.**

**(e5)** The Permittee shall conduct visual inspections of the furnace to ensure integrity of the box and minimize air infiltration. Inspections shall be conducted at least three (3) times each month when the furnace is in operation.

**(f6)** During normal operation of the furnace, the Permittee shall maintain the crown temperature and oxygen levels in the furnace as follows:

| Fuel        | Crown Temperature Range<br>(°F) | Excess Oxygen Range<br>(%) |
|-------------|---------------------------------|----------------------------|
| Natural Gas | 2200 - 2800                     | 1.0 - 1.6                  |
| Fuel Oil    | 2200 - 2800                     | 1.0 - 3.0                  |

The Permittee shall monitor and record the crown temperature and excess oxygen levels at least once per shift when the furnace is operating normally.

**(g7)** The NO<sub>x</sub> emissions from the furnace shall not exceed 1,091 lbs/MMscf when burning natural gas and 102 lbs/kgal when burning No. 2 fuel oil. **These emissions/limits are necessary to achieve the 60% reduction in NO<sub>x</sub> emissions as required by 326 IAC 10-1.**

6. In order to determine compliance with Condition D.3.3, the IDEM, OAQ has added the following record keeping requirements to Condition D.3.9..

#### D.3.9 Record Keeping Requirements

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- (c) To document compliance with Condition D.3.3, the Permittee shall maintain records in accordance with (1) through ~~(5)~~(4) below. The records shall be complete and sufficient to establish compliance with the BACT requirements.
- (1) Dates and times of flame pattern inspections;
  - (2) Charts or logs of crown temperatures and excess oxygen levels;
  - (3) Dates and times of furnace inspections; **and**
  - (4) For periods of abnormal flame patterns, the time period and actions taken to return the flame patterns to normal.**
  - ~~(5) Stack test data from the most recent stack testing.~~

7. The new rule citation, 326 IAC 2-1.1-9.5, has been added to Condition B.2 - Permit Term.

#### B.2 Permit Term [326 IAC 2-7-5(2)] **[326 IAC 2-1.1-9.5]**

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This permit is issued for a fixed term of five (5) years from the original date, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date.

8. Condition B.12 - Emergency Provisions paragraphs (a), (b) and (g) have been revised to reflect rule changes to 326 IAC 2-7-16. This section of the rule is now consistent with 40 CFR 70.6(g) and provides an affirmative defense to an action brought for non-compliance with technology based emission limitations only.

#### B.12 Emergency Provisions [326 IAC 2-7-16]

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- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation; ~~except as provided in 326 IAC 2-7-16.~~
- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a ~~health-based or~~ technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:
- (g) ~~Operations may continue during an emergency only if the following conditions are met:~~
- ~~(1) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.~~
  - ~~(2) If an emergency situation causes a deviation from a health-based limit, the Permittee may not continue to operate the affected emissions facilities unless:~~
  - ~~(A) The Permittee immediately takes all reasonable steps to correct the emergency situation and to minimize emissions; and~~

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~~(B) Continued operation of the facilities is necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value.~~

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~~Any operation shall continue no longer than the minimum time required to prevent the situations identified in (g)(2)(B) of this condition.~~

9. Condition B.14 - Multiple Exceedances has been deleted from this permit, because 326 IAC 2-7-5(1)(E) has been repealed because it conflicted with 40 CFR 70.6(a)(6).

~~B.14 Multiple Exceedances [326 IAC 2-7-5(1)(E)]~~

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~~Any exceedance of a permit limitation or condition contained in this permit, which occurs contemporaneously with an exceedance of an associated surrogate or operating parameter established to detect or assure compliance with that limit or condition, both arising out of the same act or occurrence, shall constitute a single potential violation of this permit.~~

10. A new Condition B.14 - Prior Permit Conditions Superseded has been added to the permit to clarify the intent of the new rule 326 IAC 2-1.1-9.5.

**B.14 Prior Permits Superseded [326 IAC 2-1.1-9.5]**

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**(a) All terms and conditions of previous permits issued pursuant to permitting programs approved into the state implementation plan have been either**

- (1) incorporated as originally stated,**
- (2) revised, or**
- (3) deleted**

**by this permit.**

**(b) All previous registrations and permits are superseded by this permit.**

11. Paragraph (b) has been deleted from Condition B.13 - Permit Shield. Since Condition B.14 - Prior Permits Superseded has been added to the permit, it is not necessary for this statement to be in this condition.

**B.13 Permit Shield [326 IAC 2-7-15] [326 IAC 2-7-20] [326 IAC 2-7-12]**

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~~(b) This permit shall be used as the primary document for determining compliance with applicable requirements established by previously issued permits. All previously issued operating permits are superseded by this permit.~~

12. The IDEM, OAQ has restructured Condition C.19 to clarify the contents and implementation of the compliance response plan. The language regarding the OAQ's discretion to excuse failure to perform monitoring under certain conditions has been deleted. The OAQ retains this discretion to excuse minor incidents of missing data; however, it is not necessary to state criteria regarding the exercise of that discretion in the permit. In Condition C.19(c)(7), the words "administrative amendment" has been revised to "minor permit modification," because 326 IAC 2-7-11(a)(7) has been repealed. Requests that do not involve significant changes to monitoring, reporting, or recordkeeping requirements may now be approved as minor permit modifications. The title Compliance Monitoring Plan - Failure to Take Response Steps has been changed to Compliance Response Plan - Preparation, Implementation, Records, and Reports throughout the permit.

C.19 Compliance Response Plan - ~~Failure to Take Response Steps~~ **Preparation, Implementation, Records, and Reports** [326 IAC 2-7-5] [326 IAC 2-7-6]

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- (a) The Permittee is required to **prepare** ~~implement: a compliance monitoring plan to ensure that reasonable information is available to evaluate its continuous compliance with applicable requirements. The compliance monitoring plan can be either an entirely new document, consist in whole of information contained in other documents, or consist of a combination of new information and information contained in other documents. If the compliance monitoring plan incorporates by reference information contained in other documents, the Permittee shall identify as part of the compliance monitoring plan the documents in which the information is found. The elements of the compliance monitoring plan are:~~

- ~~\_\_\_\_\_ (1) This condition;~~  
~~\_\_\_\_\_ (2) The Compliance Determination Requirements in Section D of this permit;~~  
~~\_\_\_\_\_ (3) The Compliance Monitoring Requirements in Section D of this permit;~~  
~~\_\_\_\_\_ (4) The Record Keeping and Reporting Requirements in Section C (General Record Keeping Requirements, and General Reporting Requirements) and in Section D of this permit; and~~

- (5) ~~A~~ **a** Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. ~~A CRP's shall be submitted to IDEM, OAQ upon request and shall be subject to review and approval by IDEM, OAQ. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee, supplemented from time to time by the Permittee, and maintained on site, and is comprised of:~~

- ~~(A)~~(1) Reasonable response steps that may be implemented in the event that ~~compliance-related information indicates that a response step is needed pursuant to the requirements of Section D of this permit; and an~~ **expected timeframe for taking reasonable response steps.**

- ~~(B) A time schedule for taking reasonable response steps including a schedule for devising additional response steps for situations that may not have been predicted.~~

- (2) **If, at any time, the Permittee takes reasonable response steps that are not set forth in the Permittee's current Compliance Response Plan and the Permittee documents such response in accordance with subsection (e) below, the Permittee shall amend its Compliance Response Plan to include such response steps taken.**

- (b) For each compliance monitoring condition of this permit, reasonable response steps shall be taken when indicated by the provisions of that compliance monitoring condition **as follows:** ~~Failure to take reasonable response steps may constitute a violation of the permit.~~

- (1) **Reasonable response steps shall be taken as set forth in the Permittee's current Compliance Response Plan; or**

- (2) **If none of the reasonable response steps listed in the Compliance Response Plan is applicable or responsive to the excursion, the Permittee shall devise and implement additional response steps as expeditiously as practical. Taking such additional response steps shall not be considered a deviation from this permit so long as the Permittee documents such response steps in accordance with this condition.**
  - (4) **If the Permittee determines that additional response steps would necessitate that the emissions unit or control device be shut down, the IDEM, OAQ shall be promptly notified of the expected date of the shut down, the status of the applicable compliance monitoring parameter with respect to normal, and the results of the actions taken up to the time of notification.**
  - (2) **Failure to take reasonable response steps shall constitute a violation of the permit.**
- (c) ~~Upon investigation of a compliance monitoring excursion, the~~ **The Permittee is excused from taking not required to take any** further response steps for any of the following reasons:
  - (1) A false reading occurs due to the malfunction of the monitoring equipment **and This shall be an excuse from taking further response steps** providing that prompt action was taken to correct the monitoring equipment.
  - (2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for ~~an administrative amendment~~ **a minor permit modification** to the permit, and such request has not been denied.
  - (3) An automatic measurement was taken when the process was not operating.
  - (4) The process has already returned or is returning to operating within "normal" parameters and no response steps are required.
- (d) **When implementing reasonable steps in response to a compliance monitoring condition, if the Permittee determines that an exceedance of an emission limitation has occurred, the Permittee shall report such deviations pursuant to Section B-Deviations from Permit Requirements and Conditions.**
- ~~(d)~~(e) ~~Records shall be kept of all instances in which the compliance related information was not met and of all response steps taken.~~ **The Permittee shall record all instances when response steps are taken.** In the event of an emergency, the provisions of 326 IAC 2-7-16 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.
- ~~(e)~~(f) **Except as otherwise provided by a rule or provided specifically in Section D, all monitoring as required in Section D shall be performed at all times when the equipment emission unit is operating, except for time necessary to perform quality assurance and maintenance activities.** ~~If monitoring is required by Section D and the equipment is not operating, then the Permittee may record the fact that the equipment is not operating or perform the required monitoring.~~

- (f) ~~At its discretion, IDEM may excuse the Permittee's failure to perform the monitoring and record keeping as required by Section D, if the Permittee provides adequate justification and documents that such failures do not exceed five percent (5%) of the operating time in any quarter. Temporary, unscheduled unavailability of qualified staff shall be considered a valid reason for failure to perform the monitoring or record keeping requirements in Section D.~~

13. The IDEM, OAQ, has revised Condition B.15 Deviations from Permit Requirements and Conditions and Parametric Monitoring condition D.4.4 of the permit to address concerns regarding the independent enforceability of permit conditions [see 40 CFR 70.6(a)(6)(i)]. The Parametric Monitoring conditions have been revised to establish normal operating conditions for the emission unit or control device and to require implementation of the compliance response plan when monitoring indicates operation is outside the normal range. Language that inferred that operating outside of the normal range could be considered by itself to be a deviation was removed. Condition B.15 was revised to remove language that could be considered to grant exemptions from permit requirements and to clarify reporting obligations.

B.15 Deviations from Permit Requirements and Conditions [326 IAC 2-7-5(3)(C)(ii)]

- (a) Deviations from any permit requirements (for emergencies see Section B - Emergency Provisions), the probable cause of such deviations, and any response steps or preventive measures taken shall be reported to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Quality  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

using the attached Quarterly Deviation and Compliance Monitoring Report, or its equivalent. ~~Deviations that are required to be reported by an applicable requirement~~ **A deviation required to be reported pursuant to an applicable requirement that exists independent of this permit**, shall be reported according to the schedule stated in the applicable requirement and ~~do~~ **does** not need to be included in this report.

~~The notification by the Permittee~~ **Quarterly Deviation and Compliance Monitoring Report** does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit ~~or a rule. It does not include:~~
- (1) ~~An excursion from compliance monitoring parameters as identified in Section D of this permit unless tied to an applicable rule or limit; or~~
  - (2) ~~Failure to implement elements of the Preventive Maintenance Plan unless such failure has caused or contributed to a deviation.~~

~~A Permittee's failure to take the appropriate response step when an excursion of a compliance monitoring parameter has occurred is a deviation.~~

- (c) Emergencies shall be included in the Quarterly Deviation and Compliance Monitoring Report.

#### D.4.4 Parametric Monitoring

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The Permittee shall record the total static pressure drop across the **baghouse** used in conjunction with the storage and conveyance of sand, soda ash, aluminum trihydrate, sodium silicate, and sodium aluminosilicate, at least once per shift when the material handling and storage and conveyance systems are in operation when venting to the atmosphere. ~~Unless operated under conditions for which the Compliance Response Plan specifies otherwise, When for any one reading, the pressure drop across the baghouses exhausting at stacks S-3, S-4, S-5, S-8, S-9, S-10, S-11, and S-12 shall be maintained within~~ **is outside the normal range of 3.0 and 6.0 inches of water or a range established during the latest stack test. The ,the Permittee shall take reasonable response steps in accordance with Section C- Compliance Response Plan - Preparation, Implementation, Records, and Reports. When for any one reading, the pressure drop across the baghouse exhausting at stacks S-6 is outside the normal range of -6.0 and 6.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Compliance Response Plan - Preparation, Implementation, Records, and Reports. When for any one reading, the pressure drop across the baghouses exhausting at stacks S-7 is outside the normal range of 0 and 6.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Compliance Response Plan - Preparation, Implementation, Records, and Reports.** ~~The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Compliance Monitoring Response Plan - Failure to Take Response Steps~~ **Preparation, Implementation, Records, and Reports**, shall be considered a violation of this permit.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge and Other Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

14. Part 70 requires any application form, report, or compliance certification to be certified by the Responsible Official. IDEM, OAQ has revised C.10 Asbestos Abatement Projects to clarify that the asbestos notification does not require a certification by the responsible official, but it does need to be certified by the owner or operator. IDEM, OAQ has revised C.20 Actions Related to Noncompliance Demonstrated by a Stack Test; a certification by the responsible official is required for the notification sent in response to non-compliance with a stack test.

#### C.10 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

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- (a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.
- (b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:
- (1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or
- (2) If there is a change in the following:
- (A) Asbestos removal or demolition start date;

- (B) Removal or demolition contractor; or
- (C) Waste disposal site.
- (c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).
- (d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management  
Asbestos Section, Office of Air Quality  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

**The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project.** The notifications do not require a certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (e) Procedures for Asbestos Emission Control  
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-4, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.
- (f) Indiana Accredited Asbestos Inspector  
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement that the inspector be accredited, pursuant to the provisions of 40 CFR 61, Subpart M, is federally enforceable.

Condition C.20 has been revised as follows:

C.20 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5]  
[326 IAC 2-7-6]

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- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.
- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.
- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The documents submitted pursuant to this condition do ~~not~~ require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

### Responses to PQ Corporation's Comments

On June 30, 2001, PQ Corporation submitted comments on the proposed Part 70 Permit. The following is a summary of the comments. In the responses, additions to the permit are bolded for emphasis; the language with a line through it has been deleted.

#### Comment 1:

Section A, Condition A.2(d) (4): Unique to the zeolite process, the baghouse on the zeolite dryer is not a control device. The product is being separated from an air - water vapor stream. Without this baghouse, the process would be manufacturing a sludge. Since our product is in a powder form and PQ has found that baghouses are the most efficient way to separate our product from the air stream. The unit is a product collector. IDEM should treat this unit as a piece of process equipment. This unit does not operate like a typical baghouse.

Response to Comment 1: Although PQ Corporation installed this particular baghouse to collect product from the dryer, PQ Corporation also indicated in several telephone calls that the baghouse has a product collection efficiency of greater than 85% and does control emissions of particulate matter from the dryer. The baghouse is therefore correctly identified as a control device. Since the process cannot operate without the use of the baghouse, the baghouse is considered to be integral to the process (i.e., the dryer cannot be operated without the baghouse). The technical support document for this permit failed to indicate that this control device was integral to the process. This addendum serves to correct that omission. No changes have been made to the permit.

#### Comment 2:

Section C, Condition C.7 - Fugitive Particulate Matter Emission Limitations (326 IAC 6-5). The permit states that "Pursuant to 326 IAC 6-5 fugitive particulate matter emissions shall be controlled according to the plan to be submitted by the permittee to IDEM, OAQ immediately after issuance of this permit." In order to be consistent with other plan requirements in the permit, PQ Corporation would like to submit this plan 90 days after the issuance of the permit.

Response to Comment 2: Since the plan required under 326 IAC 6-5 was not required in any of the permits previously issued to this source, OAQ has revised Condition C.7 as follows:

#### C.7 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]

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Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be controlled according to the plan to be submitted by the Permittee to IDEM, OAQ **within 90 days of issuance of this permit**~~immediately after issuance of this permit.~~

#### Comment 3:

Section C, Condition C.10(a) - Asbestos Abatement Projects. This section states "Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components or at least 35 cubic feet on all facility components then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present." For clarification purposes, PQ suggests the following wording: "Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on all facility components then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification if 326 IAC 14-10 or 40 CFR 61, Subpart M is applicable to the project."

Response to Comment 3: The language used in Condition C.10(a) is consistent with 326 IAC 14-10-1(a)(1) and 326 IAC 14-10-1(c)(1). 326 IAC 14-10-(a)(1) refers to demolition projects and states that "All the notification requirements of section 3 of this rule apply and a notification is required even if no asbestos is present." The proposed sentence "All demolition projects require notification if 326 IAC 14-10 or 40 CFR 61, Subpart M is applicable to the project" directly contradicts 326 IAC 14-10-1(a)(1). 326 IAC 14-10-1(c)(1) refers to renovations and states:

"All the notification requirements of section 3 of this rule apply if the combined amount of RACM to be stripped, removed, dislodged, cut, drilled, or similarly disturbed is any one (1) of the following:

- (d) At least two hundred sixty (260) linear feet on or off pipes.
- (e) At least one hundred sixty (160) square feet on or off other facility components.
- (f) A total of at least thirty-five (35) cubic feet on or off all facility components."

Hence, the notification requirements included in Condition 10(a) are consistent with and specific to 326 IAC 14-10. The language in Condition C.10 (d) has been revised as indicated in revision number 14 above; however, no additional changes have been made to this condition based on this comment.

#### **Comment 4:**

Section D.1, Condition D.1.6(a) - Visible Emission Notations. In order to be consistent with D.3.8(a), visible emission notations should be conducted while burning fuel oil. The draft permit states "Visible emission notation of the boiler stack exhaust (stack S-2) shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal." We would like to clarify the statement "normal daylight operations." We would suggest the following wording: "Visible emission notations of the boiler stack exhaust (stack S-2) shall be performed once per day while combusting fuel oil. A trained employee shall record whether emissions are normal or abnormal." Such a requirement would be consistent with the requirements for the furnace stack. PQ is requesting the change in order to clarify the requirements of the permit.

Response to Comment 4: Compliance monitoring conditions are in the permit in order to ensure continuous compliance with the requirements. Baghouse failure can occur suddenly; therefore monitoring of baghouse parameters should be more frequently than daily in such cases where a source operates more than one shift per day. IDEM, OAQ believes that performing visible emissions notations once per operating shift is a reasonable requirement. Since visible emission notations are only required when burning fuel oil in the boiler, Condition D.1.6 has been revised as follows:

#### **D.1.6 Visible Emissions Notations**

- 
- (a) Visible emission notations of the boiler stack exhausts (stack S-2) shall be performed once per ~~day shift~~ during normal daylight operations when ~~burning fuel oil~~ ~~exhausting to the atmosphere~~. A trained employee shall record whether emissions are normal or abnormal.

#### **Comment 5:**

Section D.3, Condition D.3.3(4) states that the "Flame patterns will be observed by a trained employee at least once day shift by a trained employee while the furnace is in normal operation." PQ Corporation suggests that a trained employee is an employee who has worked at the plant for at least one month and has been trained in the appearance and characteristics of a normal flame pattern. This will be consistent with the training requirements in Section D.1.6.

Response to Comment 5: Upon further consideration, OAQ believes that the term "trained employee" in Condition D.3.3(4) was not adequately defined in the draft permit. OAQ agrees with the qualifications suggested by PQ Corporation and has revised the permit as follows:

**D.3.3 Nitrogen Oxides (NO<sub>x</sub>) [326 IAC 10-1]**

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Pursuant to 326 IAC 10-1, the Permittee shall install, operate and maintain the following Best Available Control Technology (BACT):

- (d) The Permittee shall monitor the flame pattern using visual inspections and make necessary adjustments to maintain low NO<sub>x</sub> emissions. The flame patterns will be observed by a trained employee at least once per shift when the furnace is in normal operation. **A trained employee is an employee who has worked at the plant for at least one month and has been trained in the appearance and characteristics of a normal flame pattern.**

**Comment 6:**

Section D.3, Condition D.3.3(7). The draft permit reads "The NO<sub>x</sub> emissions from the furnace shall not exceed 1,1091 lbs per MMscf when burning natural gas and 102 lbs per kgal when burning #2 fuel oil." In order to be consistent throughout the permit, No.4 fuel oil should be added to this condition.

Response to Comment 6: OAQ agrees that the No.4 fuel oil was inadvertently omitted from this condition and has made the following revisions:

**D.3.3 Nitrogen Oxides (NO<sub>x</sub>) [326 IAC 10-1]**

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Pursuant to 326 IAC 10-1, the Permittee shall install, operate and maintain the following Best Available Control Technology (BACT):

- (g) The NO<sub>x</sub> emissions from the furnace shall not exceed 1,091 lbs/MMscf when burning natural gas and 102 lbs/kgal when burning No. 2 fuel oil, **No.4 fuel oil or a blend of No.2 and No.4 fuel oils.**

**Comment 7:**

Section D.3, Condition D.3.7. Section D.3.7 states that the department will provide an equation to determine NO<sub>x</sub> emissions. The permit fails to provide an equation. PQ Corporation has been providing this data to the Department since 9/13/00. PQ Corporation suggests that compliance with D.3.7 shall be determined using AP-42 factors for the boiler and dryer based on fuel consumption and stack test factors for the furnace based on production and fuel type.

Response to Comment 7: Compliance with the NO<sub>x</sub> emission limit is determined based on the amount of natural gas and fuel oil burned in the furnace, dryer, and boilers. OAQ has made the following revision to Condition D.3.7:

**D.3.7 Nitrogen Oxides Emissions**

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Compliance with Condition D.3.2 shall be demonstrated within 30 days of the end of each month based on the natural gas and fuel oil usage of the most recent twelve (12) month period.

~~Compliance with D.3.2 shall be determined using the following equation:~~

**Comment 8:**

Section D.3, Condition D.3.8(a). The draft permit states "Visible emission notations of the furnace stack exhaust shall be performed once per shift during normal daylight operations while combusting fuel oil. A trained employee shall record whether emissions are normal or abnormal." We would like to clarify the statement "normal daylight operations." We would suggest the following wording: "Visible emission notations of the furnace stack exhaust shall be performed once per day while combusting fuel oil. A trained employee shall record whether emissions are normal or abnormal." PQ is requesting the change in order to clarify the requirement of the permit.

Response to Comment 8: Compliance monitoring conditions are in the permit in order to ensure continuous compliance with the requirements. Baghouse failure can occur suddenly; therefore monitoring of baghouse parameters should be more frequently than daily in such cases where a source operates more than one shift per day. IDEM, OAQ believes that performing visible emissions notations once per operating shift is a reasonable requirement.

**Comment 9:**

Section D.4, Condition D.4.3(a). The draft permit states "Visible emission notations of the stack exhausts S-3, S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, and S-12 shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal." We would like to clarify the statement "normal daylight operations." We would suggest the following wording: "Visible emissions notations of the stack exhausts S-3, S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, and S-12 shall be performed once per day while exhausting to the atmosphere. A trained employee shall record whether the emissions are normal or abnormal." PQ is requesting the change in order to clarify the requirement of the permit. This request will help clarify the intent of the permit.

Response to Comment 9: Compliance monitoring conditions are in the permit in order to ensure continuous compliance with the requirements. Baghouse failure can occur suddenly; therefore monitoring of baghouse parameters should be more frequently than daily in such cases where a source operates more than one shift per day. IDEM, OAQ believes that performing visible emissions notations once per operating shift is a reasonable requirement.

**Comment 10:**

Section D.4, Condition D.4.3(c). This section requires that visible emission readings take place during that part of the operation that can normally be expected to cause the greatest emissions. Because our operation may take place at night, PQ Corporation may not be able to complete the daily visible emissions notations at the time that would normally be expected to cause the greatest emissions. PQ Corporation would like clarification on this requirement.

Response to Comment 10: Condition D.4.3(a) specifically states that the visible emissions notations must be conducted during "daylight." To be in compliance with Condition D.4.3(c), the source should perform visible emissions notations during that part of the operation expected to cause the greatest emissions during daylight hours. If the operation is performed only during the night, then visible emissions notations will not be required because Condition D.4.3(a) states they must be performed during "daylight."

**Comment 11:**

Section D4, Condition D.4.4 - Parametric Monitoring. PQ Corporation has explained to the Department in several correspondences that the Product Separator (S-6) is not a control device. As explained in Section A.2(d)(4), this process equipment is operated in a push-pull method. This unit cannot be run or maintained within a static pressure range of 3 to 6 inches of water column. PQ Corporation requests the Department change this requirement to a static pressure drop of -6.0 to 6.0 inches of water column, which is the normal range of operation for this equipment.

In order to operate our furnace stack, S-7, the pressure drop across the baghouse must be controlled within a range of 0 to 6 inches of water column. The fan for the stack regulates the furnace pressure. Since soda ash is hydrophobic, if the baghouse pressure is controlled to 3 to 6 inches of water column, the furnace becomes unstable. Therefore, PQ Corporation is requesting the pressure drop across the baghouse for S-7 be maintained between 0 to 6 inches of water column.

Response to Comment 11: For the baghouse exhausting at stack S-6, recent telephone conversations with a representative of the source confirmed that the pressure differential across the baghouse alternates between positive and negative values. The baghouse is used to collect powdered product from the natural gas-fired dryer. The wet powder is pushed through the dryer to the baghouse, where the dry powdered product is collected. A suction fan then draws the dry powder from the baghouse into two storage silos. Since the pressure differential across the baghouse is continuously pulsing between positive and negative values, IDEM has revised Condition D.4.4 to include the pressure ranges indicated in PQ Corporations comment. These changes in conjunction with the revisions made in item 14 above are shown below:

**D.4.4 Parametric Monitoring**

The Permittee shall record the total static pressure drop across the **baghouse** used in conjunction with the storage and conveyance of sand, soda ash, aluminum trihydrate, sodium silicate, and sodium aluminosilicate, at least once per shift when the material handling and storage and conveyance systems are in operation when venting to the atmosphere. ~~Unless operated under conditions for which the Compliance Response Plan specifies otherwise, When for any one reading, the pressure drop across the baghouses exhausting at stacks S-3, S-4, S-5, S-8, S-9, S-10, S-11, and S-12 shall be maintained within~~ **is outside the normal range of 3.0 and 6.0 inches of water or a range established during the latest stack test. The ,the Permittee shall take reasonable response steps in accordance with Section C- Compliance Response Plan - Preparation, Implementation, Records, and Reports. When for any one reading, the pressure drop across the baghouse exhausting at stacks S-6 is outside the normal range of -6.0 and 6.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Compliance Response Plan - Preparation, Implementation, Records, and Reports. When for any one reading, the pressure drop across the baghouses exhausting at stacks S-7 is outside the normal range of 0 and 6.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Compliance Response Plan - Preparation, Implementation, Records, and Reports.** ~~The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading.~~ **A pressure reading that is outside the above mentioned range is not a deviation from this permit.** Failure to take response steps in accordance with Section C - Compliance ~~Monitoring Response Plan - Failure to Take Response Steps~~ **Preparation, Implementation, Records, and Reports**, shall be considered a violation of this permit.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge and Other Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

**Comment 12:**

Part 70 Quarterly Report Form. The header section states

Facility: Furnace, Boilers (SG-1001 and SG-1002) and dryer

Parameter : NO<sub>x</sub>

Limit: 180 MMscf of natural gas (or fuel oil equivalent) per 12 consecutive month period

The Facility section of this header should read "Furnace." This change is required in order to be consistent with this permit in section D.3.2 Nitrogen Oxides. This section states "Emissions of the nitrogen oxides from the furnace, boilers, and dryers shall be limited to 98 tons per 12 consecutive months. To comply with this limit, the furnace shall be limited to 180 MMscf of natural gas (or fuel oil equivalent) per 12 consecutive month period."

Response to Comment 12: For clarification purposes, OAQ has revised the Quarterly Report Form as follows:

"Facility: ~~Furnace, Boilers (SG-1001 and SG-1002) and dryer~~

Parameter: NO<sub>x</sub>

Limit: 180 MMscf of natural gas (or fuel oil equivalent) per 12 consecutive month period.

**Comment 13:**

Technical Support Document, page 3, Enforcement Issues. Prior to rebuilding our furnace, PQ approached the state with our plans. According to the engineering model, the analysis indicated that the emissions from the furnace would be identical to the emissions from the furnace prior to the rebuild. Based on that analysis, PQ would not be required to obtain a construction permit or file a BACT analysis. As stated in the technical support document, the BACT analysis has been prepared and submitted.

Response to Comment 13: Although PQ Corporation may have believed the modifications to the furnace would not result in an increase in NO<sub>x</sub> emissions, this fact has no bearing on the issue of whether PQ Corporation was required to submit a BACT analysis prior to modifying the furnace. The BACT analysis is clearly required by the provisions of 326 IAC 10-1-1(a)(3). This rule states:

"Facilities requiring a permit under 326 IAC 2 that are constructed, modified, or reconstructed after the effective date of this rule and to which a new source performance standard (NSPS) does not apply shall comply with this rule or best available control technology (BACT), whichever is more stringent." [326 IAC 10-1-1(a)(3)]

Since no NSPS applies to this furnace, PQ Corporation was required to submit a BACT analysis.

**Comment 14:**

Technical Support Document, Page 4, Enforcement Issues. In 1990, PQ installed two boilers. At that time the permit listed the boilers as two 10 MMBtu boilers. This error was made because the boilers were only operated at 10 MMBtus. As part of the review for this permit, this error was discovered and reported to IDEM. However, all emission reports from these boilers have been correctly reported to the Department since 1990.

Response to Comment 14: This fact has been noted. No changes have been made because OAQ prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision.

**Comment 15:**

Technical Support Document, Page 5, Potential to Emit after Issuance. The asterisk for this table reads: "NO<sub>x</sub> emissions from the boilers, furnace and dryer are limited to 98 tons per year. NO<sub>x</sub> emissions from the space heaters are limited to 2 tons per year and dryer. NO<sub>x</sub> emissions will be controlled by adjusting the amount of natural gas and fuel oil burned." The second sentence should read "NO<sub>x</sub> emissions from the space heaters are limited to 2 tons per year. The words "and dryer" should be deleted from this sentence in order to be consistent with the table above.

Response to Comment 15: PQ Corporation is correct that the words "and dryer" should be deleted from the second sentence in the table shown on page 5 of the Technical Support Document. However, no changes have been made because OAQ prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision.

**Comment 16:**

Technical Support Document, Page 9, BACT Analysis Item (g). The permit reads "The NO<sub>x</sub> emissions from the furnace shall not exceed 1,091 lbs per MMscf when burning natural gas and 102 lbs per kgal when burning No. 2 fuel oil." In order to be consistent with the permit Section D.2.2, No. 4 fuel needs to be included in this item.

Response to Comment 16: See response to Condition 6 above. No changes have been made because the OAQ prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision.

**Comment 17:**

Technical Support Document, page 12, item (a)(1). The Technical Support Document reads "For 326 IAC 2-3 (emission offset) to be not applicable, the permittee must demonstrate that nitrogen oxide emissions from the dryer and other NO<sub>x</sub> emission sources are controlled by limiting the burning of fuel oil and natural gas such that the nitrogen oxide emissions are less than 100 tons per 12 consecutive month period." In order to clarify the requirements, PQ is suggesting the following wording: "For 326 IAC 2-3 (emission offset) to be not applicable, the permittee must demonstrate that nitrogen oxide emissions from the dryer and other NO<sub>x</sub> emission sources are controlled by limiting the burning of fuel oil and natural gas such that the nitrogen oxide emissions are less than 100 tons for the total site per 12 consecutive month period."

Response to Comment 17: The nitrogen oxide emissions for the entire source are limited to 100 tons per twelve consecutive month. No changes have been made because the OAQ prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision.

**Comment 18:**

Technical Support Document, page 13(d)(2). As previously stated, the Product Separator (S-6) is not a control device. As explained in Section A.2 (d)(4), this process equipment is operated in a push-pull method. This unit cannot be run or maintained within a static pressure range of 3 to 6 inches of water column. PQ Corporation requests the Department changes this requirement to a static pressure drop of -6.0 and 6.0 inches of water column, which is the normal range of operation for this equipment.

In order to operate our furnace stack, S-7, the pressure drop across the baghouse must be controlled within a range of 0 to 6 inches of water column. The fan for the stack regulates the furnace pressure. Since the soda ash is hydrophobic, if the baghouse pressure is controlled between 3 to 6 inches of water column, the furnace pressure becomes unstable. Therefore, PQ Corporation is requesting the pressure drop across the baghouse for S-7 be maintained between 0 to 6 inches of water column.

Response to Comment 18: See response to Comment 11 above. No changes have been made because the OAQ prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision.

**Comment 19:**

Technical Support Document, Appendix A, Page 7. The title for this table reads:

“Appendix A: Emission Calculations  
Commercial/Institutional/Residential Combustors (<100 mmBtu/hr)  
Combustion of No. 2 Fuel Oil in Two 10MMBtu/hour Boilers  
HAP Emissions.”

The title of the table should read:

“Appendix A: Emission Calculations  
Commercial/Institutional/Residential Combustors (<100 mmBtu/hr)  
Combustion of No. 2 Fuel Oil in Two 17.5MMBtu/hour Boilers  
HAP Emissions.”

Response to Comment 19: PQ Corporation is correct. The title to this table should have stated two 17.5 MMBtu per hour boilers and not two 10 MMBtu per hour boilers as indicated in the title. The HAP emissions shown in this table are for two 17.5 MMBtu per hour boilers. Hence, the calculations are correct. No changes have been made because the OAQ prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision.

**Comment 20:**

PQ Corporation provided the data used in Appendix A, Page 3 of 10 of the TSD. PQ Corporation has deemed this information to be proprietary business information. PQ Corporation does not want this table to appear in the public domain. PQ requests that IDEM take the necessary steps to remove this document from the Jeffersonville Township Library, 211 Court Avenue, Jeffersonville, IN.

Response to Comment 20: As requested by PQ Corporation, IDEM will take appropriate action to remove the proprietary business information from the public domain.

#### **Comment 21:**

TSD, Appendix A - Emissions Calculations, Material Storage and Handling. As stated in previous comments the table needs to be amended to change the soda ash maximum quantity of material to [confidential business information removed]. The columns *Maximum Uncontrolled PM Emissions* and *Maximum Controlled Emissions* will need to be amended.

Response to Comment 21: Based on this comment the entries for PM and PM<sub>10</sub> in the tables on page 4 and page 5 of the TSD are incorrect. The correct values are included in a confidential memorandum. No changes have been made to the TSD because the OAQ prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision. The changes to the PTE estimates for PM and PM<sub>10</sub> do not affect the applicability of any state and federal regulations; hence, no changes have been made to the permit.

#### **Responses to PQ Corporation's Additional Comments**

PQ Corporation submitted additional comments on September 21, 2001. The following is a summary of the comments. In the responses, additions to the permit are bolded for emphasis; the language with a line through it has been deleted.

#### **Comment 1:**

The permit states in D.1.6(a), D.3.9(a) and D.4.3(a) of the proposed permit that visible emission notations shall be performed once per shift during normal daylight operations. PQ Corporation's Jeffersonville plant operates on two shifts per day. The shift hours are 7:00 a.m. to 7:00 p.m. and 7:00 p.m. to 7:00 a.m. During the 7:00 a.m. to 7:00 p.m. shift the plant will have no problem completing the required visible emission notations. PQ Corporation is requesting clarification on the times that would be included in the "normal daylight hours" for the 7:00 p.m. to 7:00 a.m. shift. Consider the following scenario, there will be times when only five minutes of daylight will be available for the 7:00 p.m. to 7:00 a.m. shift. Is it IDEM's intention that a visible emission notation be completed for that time? PQ Corporation agrees that upsets can occur any time of the day. For this reason each employee is trained on the importance of preventing and detecting a condition where the operation could be out of compliance. In the case of the boiler, fuel consumption and combustion air flow are important parameters to observe. As part of this permit, several parameters are required to be monitored and documented on the furnace and each baghouse is equipped with a pressure gauge. These controls and outputs are monitored for any upset conditions that could lead to an abnormal emission reading. For these reasons PQ Corporation wishes to document visible emissions notations once per day. If any other indication is detected at any time throughout the day the employees will be trained to act in accordance with the Compliance Monitoring Plan and take appropriate troubleshooting contingency and response steps.

Response to Comment 1: Visible emission notations are only required "...during normal daylight operations.." Since this source has two shifts per day and one shift occurs between 7 p.m. and 7 a.m., IDEM recognizes that it may be impossible during the winter months to make visible emissions notations. However, it is IDEM's policy to require "once per shift" visible emissions notations, therefore, no changes have been made to the permit.

**Comment 2:**

The permit states in Condition C.21(b) that “the annual emission statement covers the twelve consecutive month time period starting December 1 and ending November 30.” PQ Corporation requests that the annual emission statement cover the twelve month time period starting January 1 and ending December 31. This would make the certification required in Condition B.10 cover the same time period as Condition C.21.

Response to Comment 2: The reporting period for the annual emissions statement is established under 326 IAC 2-6-2(8). Since this reporting period was established by a State regulation, the reporting period of December 1 through November 30 indicated in the proposed permit cannot be changed as requested by the source.

## **Indiana Department of Environmental Management Office of Air Quality**

### **Technical Support Document (TSD) for a Part 70 Operating Permit**

#### **Source Background and Description**

**Source Name:** PQ Corporation  
**Source Location:** 7<sup>th</sup> Street and Missouri Avenue, Jeffersonville, Indiana 47130  
**County:** Clark  
**SIC Code:** 2819  
**Operation Permit No.:** T019-7718-00018  
**Permit Reviewer:** ERG/AB

The Office of Air Quality (OAQ) has reviewed a Part 70 permit application from PQ Corporation relating to the operation of a sodium aluminosilicate manufacturing facility.

#### **Permitted Emission Units and Pollution Control Equipment**

The source consists of the following permitted emission units and pollution control devices:

- (a) Two (2) fire tube boilers (SG-1001 and SG-1002), constructed in 1991, each rated at seventeen and five-tenths (17.5) million British thermal units (MMBtu) per hour and exhausting at one (1) stack, identified as S-2. The boilers are fired by natural gas, No. 2 fuel oil and No. 4 fuel oil.
- (b) One (1) natural gas-fired dryer, constructed in 1991, rated at ten (10) million British thermal units (MMBtu) per hour and exhausting through a baghouse separator at stack S-6. The dryer uses propane as a backup fuel. This dryer is an insignificant source when burning natural gas.
- (c) One (1) melting furnace with a maximum heat input capacity of 19.7 MMBtu per hour, fired by natural gas or fuel oil, and exhausting at stack S-1. The furnace is fired using natural gas, No. 2 fuel oil and No. 4 fuel oil. The furnace was constructed in 1938 and rebuilt in 1998.
- (d) Material storage and handling facilities including:
  - (1) Aluminum trihydrate storage and transfer facilities consisting of one (1) pneumatic conveyor system equipped with a baghouse exhausting at stack S-3; one (1) 400 ton capacity storage silo equipped with a baghouse exhausting at stack S-4; and one (1) weigh bin with a maximum capacity of 12,580 pounds per hour equipped with a baghouse exhausting at stack S-5.
  - (2) Sodium silicate storage and transfer facilities consisting of a bucket conveyor system and one (1) 1,400 ton capacity storage silo equipped with a baghouse for particulate control exhausting at stack S-12.
  - (3) Sand and soda ash storage and transfer facilities consisting of one (1) 1,500 ton capacity storage silo for sand and one (1) 940 ton capacity storage silo for soda ash, both connected to one (1) baghouse exhausting at stack S-8; two (2) weigh hoppers connected to one (1) baghouse exhausting at stack S-7; and one (1)

pneumatic conveying system for the transfer of sand and soda ash from the weigh hoppers to the furnace equipped with a baghouse.

- (4) Sodium aluminosilicate transfer, storage, and loading facilities consisting of a pneumatic conveyor system for transfer to the storage silos, equipped with one (1) baghouse separator for particulate control exhausting at stack S-6; two (2) 625 ton capacity storage silos each equipped with one (1) baghouse for particulate control exhausting at stacks S-9 and S-10; and one (1) pneumatic conveyor system for truck and rail car loading, equipped with a baghouse for particulate control exhausting at stack S-11.

### **Unpermitted Emission Units and Pollution Control Equipment**

There are no unpermitted facilities operating at this source during this review process.

### **Insignificant Activities**

The source also consists of the following insignificant activities, as defined in 326 IAC 2-7-1(21):

- (a) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) Btu per hour.
- (b) Propane or liquid petroleum gas, or butane-fired combustion sources with heat input equal to or less than six million (6,000,000) Btu per hour.
- (c) Combustion source flame safety purging on startup.
- (d) VOC and HAP storage tanks with capacity less than or equal to 1,000 gallons and annual throughputs less than 12,000 gallons.
- (e) Refractory storage not requiring air pollution control equipment.
- (f) Application of oils, greases, lubricants or other nonvolatile materials applied as temporary protective coatings.
- (g) Degreasing operations that do not exceed 145 gallons per 12 months.
- (h) Closed loop heating and cooling systems.
- (i) Activities associated with the treatment of wastewater streams with an oil and grease content less than or equal to 1% by volume.
- (j) Noncontact cooling tower systems with natural draft cooling towers not regulated under NESHAP.
- (k) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment.
- (l) Heat exchanger cleaning and repair.
- (m) Paved and unpaved roads and parking lots with public access.
- (n) Blowdown for any of the following: sight glass; boiler; compressors; pumps; and cooling tower.
- (o) On-site fire and emergency response training approved by the department.
- (p) Purge double block and bleed valves.

- (q) A laboratory as defined in 326 IAC 2-7-1(20)(c).
- (r) Other emission units and activities with potential emissions below the thresholds in 326 IAC 2-7-1(21)(A):
  - (1) Aluminum trihydrate unloading operations emitting less than five (5) pounds per hour of particulate matter.
  - (2) Sand and soda ash unloading operations less than five (5) pounds per hour of particulate matter.
  - (3) Fuel oil storage tanks emitting less than two (2) pounds per hour of VOCs.
  - (4) Demister for the aluminum trihydrate digester exhausting at stack S-16, emitting less than five (5) pounds per hour of particulate matter.
  - (5) Demister for the sodium silicate dissolvers exhausting at stack S-13, emitting less than five (5) pounds per hour of particulate matter.

Note: The emissions from the furnace described in (c) above normally exhausts at stack S-1 after passing through an unfired wasteheat boiler. During maintenance activities, the emissions from the furnace are exhausted through the waste heat boiler by-pass stack.

### Existing Approvals

The source has been operating under previous approvals including, but not limited to, the following:

- (a) CP 019-2014-00018, issued on September 18, 1991.
- (b) OP10-11-89-0224, issued on March 24, 1987.

All conditions from previous approvals were incorporated into this Part 70 permit except the following:

- (a) OP 10-11-89-0225, issued on March 27, 1987.

Conditions 5: That particulate matter emissions shall be limited to:

- (1) from the 150 hp boiler: 0.060 pounds per million Btu's input and 0.3 tons per year [326 IAC 6-1-17]
- (b) CP 019-2014-00018, issued on September 18, 1991.

This permit included permission to construct and operate two (2) 10 MMBtu per hour boilers. These boilers were replaced by two (2) 17.5 MMBtu per hour boilers.

Reason not incorporated: PQ Corporation stated in a letter dated October 17, 2000, that this boiler was no longer located at the Jeffersonville plant.

### Enforcement Issue

- (a) IDEM is aware that the furnace was modified (rebuilt) and operated prior to receipt of the proper permit.
- (b) PQ Corporation was also found to be out of compliance with 326 IAC 10-1 (Nitrogen Oxides Control in Clark and Floyd Counties) following their modification of the furnace in 1998. PQ Corporation failed to submit a BACT analysis for the furnace as required by

326 IAC 10-1-1(a)(3). This analysis has now been submitted (January 24, 2001) and was used in the preparation of this permit.

- (c) PQ Corporation constructed and operated two (2) 17.5 MMBtu per hour boilers in 1991 without applying for the appropriate approval from IDEM and OAQ.
- (d) IDEM is reviewing these matters and will take appropriate action. This proposed permit is intended to satisfy the requirements of the construction permit rules.

## Recommendation

The staff recommends to the Commissioner that the Part 70 permit be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An administratively complete Part 70 permit application for the purposes of this review was received on December 13, 1996. Additional information was received on January 21, 1997, February 5, 1997, November 20, 1997, March 25, 1998, February 2, 1999, May 17, 2000, September 7, 2000 and September 11, 2000, January 30, 2001, March 22, 2001, May 15, 2001, May 29, 2001, and June 6, 2001.

A notice of completeness letter was mailed to the source on February 11, 1997.

## Emission Calculations

See Appendix A of this document for detailed emissions calculations (Appendix A, pages 1 through 10.)

## Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA."

This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

| Pollutant       | Potential To Emit (tons/year) |
|-----------------|-------------------------------|
| PM              | 2,074                         |
| PM-10           | 2,074                         |
| SO <sub>2</sub> | 174.6                         |
| VOC             | 4.08                          |
| CO              | 19.6                          |
| NO <sub>x</sub> | 120.5                         |

Note: For the purpose of determining Title V applicability for particulates, PM-10, not PM, is the regulated pollutant in consideration.

| HAP's           | Potential To Emit (tons/year) |
|-----------------|-------------------------------|
| Benzene         | Negligible                    |
| Dichlorobenzene | Negligible                    |
| Formaldehyde    | Negligible                    |
| Hexane          | Negligible                    |

| HAP's     | Potential To Emit (tons/year) |
|-----------|-------------------------------|
| Toluene   | Negligible                    |
| Lead      | Negligible                    |
| Cadmium   | Negligible                    |
| Chromium  | Negligible                    |
| Magnesium | Negligible                    |
| Nickel    | Negligible                    |
| TOTAL     | <25                           |

- (a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of PM and NO<sub>x</sub> are equal to or greater than 100 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7.
- (b) Fugitive Emissions  
Since this type of operation is one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive emissions are counted toward determination of PSD and Emission Offset applicability.

### Actual Emissions

The following table shows the actual emissions from the source. This information reflects the 1999 OAQ emission data.

| Pollutant       | Actual Emissions (tons/year) |
|-----------------|------------------------------|
| PM              | —                            |
| PM-10           | 18                           |
| SO <sub>2</sub> | 47                           |
| VOC             | 3                            |
| CO              | 6                            |
| NO <sub>x</sub> | 86                           |
| HAP             | None                         |

### Potential to Emit After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the significant emission units after controls. The control equipment is considered federally enforceable only after issuance of this Part 70 operating permit.

|                               | Potential to Emit<br>(tons/year) |       |                 |      |       |                 |            |
|-------------------------------|----------------------------------|-------|-----------------|------|-------|-----------------|------------|
| Process/facility              | PM                               | PM-10 | SO <sub>2</sub> | VOC  | CO    | NO <sub>x</sub> | HAPs       |
| Boilers                       | 7.4                              | 7.4   | 78.8            | 0.84 | 12.88 | < 98            | Negligible |
| Furnace                       | 24.8                             | 23.7  | 95.8            | 3.0  | 3.0   |                 | Negligible |
| Dryer                         | 0.33                             | 0.33  | 0.03            | 0.24 | 3.7   |                 | Negligible |
| Material Storage and Handling | 2.04                             | 2.04  | 0               | 0    | 0     | 0               | 0          |
| Total Emissions               | 34.6                             | 33.5  | 174.6           | 4.1  | 19.6  | <100.0*         | Negligible |

\* NO<sub>x</sub> emissions from the boilers furnace and dryer are limited to 98 tons per year. NO<sub>x</sub> emissions from the space heaters are limited to 2 tons per year and dryer. NO<sub>x</sub> emissions will be controlled by adjusting the amount of natural gas and fuel oil burned.

## County Attainment Status

The source is located in Clark County.

| Pollutant       | Status                 |
|-----------------|------------------------|
| PM-10           | Attainment             |
| SO <sub>2</sub> | Attainment             |
| NO <sub>2</sub> | Attainment             |
| Ozone           | Moderate Nonattainment |
| CO              | Attainment             |
| Lead            | Attainment             |

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO<sub>x</sub>) are precursors for the formation of ozone. Therefore, VOC and NO<sub>x</sub> emissions are considered when evaluating the rule applicability relating to the ozone standards. This area of Clark County has been designated as moderate nonattainment for ozone. Therefore, VOC and NO<sub>x</sub> emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.
- (b) Clark County has been classified as attainment or unclassifiable for PM-10, SO<sub>2</sub>, CO, and lead. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

## Part 70 Permit Conditions

This source is subject to the requirements of 326 IAC 2-7, pursuant to which the source has to meet the following:

- (a) Emission limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements at the time of issuance of Part 70 permits.
- (b) Monitoring and related record keeping requirements which assume that all reasonable information is provided to evaluate continuous compliance with the applicable requirements.

## Federal Rule Applicability

- (a) The storage tanks are not subject to the requirements of the New Source Performance Standard, 326 IAC 12, (40 CFR 60 Subparts K, Ka, and Kb, because the tanks were constructed in 1938 and are not used to store VOCs.
- (b) The boilers are subject to the New Source Performance Standard, 40 CFR 60, Subpart Dc) (326 IAC 12) because this standard applies to all boilers with heat input less than 100 MMBtu/hour or greater than or equal to 10 MMBtu/hour. Under this rule the SO<sub>2</sub> emissions from the two (2) oil-fueled boilers shall not exceed five tenths (0.5) pounds per million Btu heat input or the sulfur content of the fuel oil shall not exceed five-tenths percent (0.5%) by weight [40 CFR 60.42c(d)]. The fuel oil sulfur content applies at all times, including periods of startup, shutdown, and malfunction.
- (c) The melting furnace is not subject to the requirements of the New Source Performance Standard 40 CFR 60, Subpart CC (Glass Manufacturing Plants) (326 IAC 12), because (1) the furnace is used to manufacture a soluble inorganic chemical rather than the flat, pressed, blown or container glass manufactured using a traditional glass furnace; (2) no additives such as lead, sulfates, arsenic, or fluorides are added; (3) the operating temperature for the furnace is less than for traditional glass furnaces; and (4) the production process after the furnace bears no similarity to the glass making industry.

Subpart CC includes PM limits for container glass, pressed and blown glass (including borosilicate, lead and opal fluoride recipes), wool fiberglass, and flat glass. PQ Corporation does not manufacture any of these products. Subpart CC does not provide any limits for furnaces manufacturing sodium silicate pellets (an inorganic chemical). In addition, the U.S. EPA concluded during discussions with PQ Corporation that the 40 CFR 60, Subpart CC was not applicable to the sodium silicate furnaces PQ Corporation operates at this and other plants.

- (d) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this source.
- (e) This source is not subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR 63, Subpart T (National Emissions Standards for Halogenated Solvent Cleaning) (326 IAC 14), because this source does not use halogenated solvents.

### **State Rule Applicability - Entire Source**

#### **326 IAC 2-6 (Emission Reporting)**

This source is subject to 326 IAC 2-6 (Emission Reporting), because it has the potential to emit more than ten (10) tons per year of NO<sub>x</sub> and more than one hundred (100) tons per year of particulate matter. Pursuant to this rule, the owner/operator of the source must annually submit an emission statement for the source. The annual statement must be received by April 15 of each year and contain the minimum requirement as specified in 326 IAC 2-6-4. The submittal should cover the period defined in 326 IAC 2-6-2(8)(Emission Statement Operating Year).

The source will be required to annually submit a statement of the actual emissions of all federally regulated pollutants from the source, for the purpose of fee assessment.

#### **326 IAC 5-1 (Opacity Limitations)**

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of thirty percent (30%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

### **State Rule Applicability - Individual Facilities**

#### **326 IAC 6-1-2(a) (Particulate Matter (PM))**

Pursuant to 326 IAC 6-1-2(a) (Nonattainment Area Particulate Emission Limitations for General Sources), the particulate matter emissions from the dryer and the storage and conveyance of sand, soda ash, sodium silicate, aluminum trihydrate, and sodium aluminosilicate shall be limited to 0.03 grains per dry standard cubic foot. The baghouses shall be in operation at all times the dryer and the storage and conveyance systems are in operation in order to comply with this limit.

#### **326 IAC 6-1-17 (Particulate Matter (PM))**

- (a) Pursuant to 326 IAC 6-1-17 (Nonattainment Area Particulate Emissions for Clark County), the particulate matter emissions from the melting furnace shall be limited to 51.8 tons per year and 1.4 pounds per ton of sodium silicate product.

Note: The 5 MMBtu per hour boiler specified in 326 IAC 6-1-17 has been decommissioned and is no longer at the plant.

326 IAC 2-3 (Emission Offset Minor Limit)

The burning of natural gas and fuel oil in the furnace boilers and dryer, shall be limited such that the potential to emit nitrogen oxides is less than ninety-eight (98) tons per twelve (12) consecutive month period. The NO<sub>x</sub> emissions from space heaters located at the plant are estimated to be less than 2 MMBtu/hours; hence compliance with the ninety-eight (98) tons per year limit for the boilers and furnace makes 326 IAC 2-3 (Emission Offset) not applicable.

To comply with this condition, the furnace shall be limited to 180 MMscf of natural gas (or fuel oil equivalent) per twelve (12) consecutive month period. For each gallon of No. 2 fuel oil, No. 4 fuel oil or combination of No. 2 and No.4 fuel oils burned in the furnace the limit shall be reduced by 93.5 scf. For each standard cubic foot of natural gas burned in a boiler the limit shall be reduced by 0.092 scf. For each gallon of No. 2 fuel oil, No. 4 fuel oil or combination of No. 2 and No. 4 fuel oils burned in a boiler the limit shall be reduced by 18.33 scf. For each standard cubic foot of natural gas burned in the dryer, the limit shall be reduced by 0.092 scf.

326 IAC 10-1 (Nitrogen Oxides Control in Clark and Floyd County)

Based on information provided by PQ Corporation, IDEM, OAQ determined that 326 IAC 10-1 is applicable to furnace because rule 326 IAC 10-1-1(a)(3) was triggered when the PQ modified the furnace in 1998. This rule requires the furnace to comply with either the requirements of 326 IAC 10-1 or Best Available Control Technology (BACT), whichever is more stringent. For facilities that emit or have the potential to emit NO<sub>x</sub> equal to or greater than 40 tons per year, 326 IAC 10-1 states that actual NO<sub>x</sub> emissions must be controlled by at least 40% [326 IAC 10-1-4(b)(5)]. Since the BACT proposed by PQ Corporation reduces emissions by greater than 40%, IDEM concluded that BACT will be more stringent than the requirements of 326 IAC 10-1-4(b)(5).

The Permittee shall install, operate and maintain the following Best Available Control Technology (BACT):

- (a) Reduce the amount of excess air in the flame zone of the burners by sealing the burners and furnace box to prevent infiltration of excess air.
- (b) Use long luminous flames to reduce the peak flame temperature and gas residence time at peak temperatures.
- (c) Determine the flame pattern that provides optimal conditions for minimizing NO<sub>x</sub> emissions.
- (d) The Permittee shall monitor the flame pattern using visual inspections and make necessary adjustments to maintain low NO<sub>x</sub> emissions. The flame patterns will be observed by a trained employee at least once per shift when the furnace is in normal operation.
- (e) The Permittee shall conduct visual inspections of the furnace to ensure integrity of the box and minimize air infiltration. Inspections shall be conducted at least three (3) times each month when the furnace is in operation.
- (f) During normal operation of the furnace, the Permittee shall maintain the crown temperature and oxygen levels in the furnace as follows:

| Fuel        | Crown Temperature Range (°F) | Excess Oxygen Range (%) |
|-------------|------------------------------|-------------------------|
| Natural Gas | 2200 - 2800                  | 1.0 - 1.6               |
| Fuel Oil    | 2200 - 2800                  | 1.0 - 3.0               |

The Permittee shall monitor and record the crown temperature and excess oxygen levels at least once per shift when the furnace is operating normally.

- (g) The NO<sub>x</sub> emissions from the furnace shall not exceed 1,091 lbs/MMscf when burning natural gas and 102 lbs/kgal when burning No.2 fuel oil.

326 IAC 6-1-2(b)(4) and 326 IAC 6-1-2 (b)(5) (Particulate Matter Limitation (PM))

Pursuant to 326 IAC 6-1-2(b)(4) (Nonattainment Area Particulate Limitations for Fossil Fuel Fired Steam Generators; Liquid Fuel) and 326 IAC 6-1-2 (b)(5) (Nonattainment Area Particulate Limitations for Fossil Fuel Fired Steam Generators; Gaseous Fuel), particulate matter emissions from the boilers (SG-1001 and SG-1002) shall be limited to 0.15 pounds per million Btu heat input when fuel oil is burned and 0.01 grains per day standard cubic foot when natural gas is burned.

326 IAC 7-1.1-1 (Sulfur Dioxide (SO<sub>2</sub>) Emissions Limitations)

Pursuant to 326 IAC 7-1.1 (SO<sub>2</sub> Emissions Limitations), the SO<sub>2</sub> emissions from the furnace and boilers shall not exceed five-tenths (0.5) pound per million Btu heat input while combusting fuel oil.

326 IAC 8-3-2 (Cold Cleaner Operations)

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations) for cold cleaning operations existing as of January 1, 1980, located in Clark County and which have potential emissions of one hundred (100) tons or greater per year, the owner or operator shall:

- (a) Equip the cleaner with a cover;
- (b) Equip the cleaner with a facility for draining cleaned parts;
- (c) Close the degreaser cover whenever parts are not being handled in the cleaner;
- (d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;
- (e) Provide a permanent, conspicuous label summarizing the operation requirements;
- (f) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

326 IAC 8-3-5 (Cold Cleaner Degreaser Operation and Control)

- (a) Pursuant to 326 IAC 8-3-5(a) (Cold Cleaner Degreaser Operation and Control), the owner or operator of a cold cleaner degreaser facility existing as of January 1, 1980, shall ensure that the following control equipment requirements are met:

- (1) Equip the degreaser with a cover. The cover must be designed so that it can be easily operated with one (1) hand if:
  - (A) The solvent volatility is greater than two (2) kiloPascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F));

- (B) The solvent is agitated; or
  - (C) The solvent is heated.
- (2) Equip the degreaser with a facility for draining cleaned articles. If the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F)), then the drainage facility must be internal such that articles are enclosed under the cover while draining. The drainage facility may be external for applications where an internal type cannot fit into the cleaning system.
  - (3) Provide a permanent, conspicuous label which lists the operating requirements outlined in subsection (b).
  - (4) The solvent spray, if used, must be a solid, fluid stream and shall be applied at a pressure which does not cause excessive splashing.
  - (5) Equip the degreaser with one (1) of the following control devices if the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F)), or if the solvent is heated to a temperature greater than forty-eight and nine-tenths degrees Celsius (48.9°C) (one hundred twenty degrees Fahrenheit (120°F)):
    - (A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.
    - (B) A water cover when solvent is used is insoluble in, and heavier than, water.
    - (C) Other systems of demonstrated equivalent control such as a refrigerated chiller or carbon adsorption. Such systems shall be submitted to the U.S. EPA as a SIP revision.
- (b) Pursuant to 326 IAC 8-3-5(b) (Cold Cleaner Degreaser Operation and Control), the owner or operator of a cold cleaning facility existing as of July 1, 1990, shall ensure that the following operating requirements are met:
    - (1) Close the cover whenever articles are not being handled in the degreaser.
    - (2) Drain cleaned articles for at least fifteen (15) seconds or until dripping ceases.
    - (3) Store waste solvent only in covered containers and prohibit the disposal or transfer of waste solvent in any manner in which greater than twenty percent (20%) of the waste solvent by weight could evaporate.

## Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this source are as follows:

- (a) The two (2) fire-tube boilers (SG-1001 and SG 1002) have applicable compliance monitoring conditions as specified below:
    - (1) Daily visible emissions notations of the boiler stack exhaust (identified as stack S-2) shall be performed during normal daylight operations. A trained employee will record whether emissions are normal or abnormal. For processes operated continuously "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions. A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.
    - (2) The permittee shall demonstrate compliance with 40 CFR 60, Subpart Dc by utilizing one of the following options:
      - (A) Providing vendor analysis of fuel delivered, if accompanied by a certification; or
      - (B) Analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19. consecutive month period by maintaining fuel usage and NOx emission data.
- Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted. If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling.
- (3) The Permittee shall demonstrate that the potential emissions of nitrogen oxides for the entire source do not exceed one hundred (100) tons per twelve (12) consecutive month period. For 326 IAC 2-3 (Emission Offset) to be not applicable, the Permittee must demonstrate that nitrogen oxide emissions from the boilers and other NOx emission sources are controlled by limiting the burning of fuel oil and natural gas such that the nitrogen oxide emissions are less than 100 tons per twelve consecutive month period.

These monitoring conditions are necessary because the boilers must operate properly to ensure compliance with 326 IAC 6-2-4 (Particulate Matter Limitations for Sources of Indirect Heating), 326 IAC 2-7 (Part 70), and 40 CFR 60, Subpart Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units).

- (b) The 10 MMBtu/hour dryer has applicable compliance monitoring conditions as specified below:
- (1) For 326 IAC 2-3 (Emission Offset) to be not applicable, the Permittee must demonstrate that nitrogen oxide emissions from the dryer and other NO<sub>x</sub> emission sources are controlled by limiting the burning of fuel oil and natural gas such that the nitrogen oxide emissions are less than 100 tons per twelve consecutive month period.
- (c) The furnace has applicable compliance monitoring conditions as specified below:
- (1) Daily visible emissions notations of the furnace exhaust stack (S-1) shall be performed during normal daylight operations. A trained employee will record whether emissions are normal or abnormal. For processes operated continuously "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions. A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.
  - (2) Pursuant to 326 IAC 3-7-4, the Permittee shall demonstrate that the sulfur dioxide emissions do not exceed five-tenths (0.5) pound per million Btu heat input by (i) providing vendor analysis of fuel delivered, if accompanied by a certification or (ii) analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19. Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and if a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling. Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the furnace using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6.
  - (3) The Permittee shall demonstrate that the potential emissions of nitrogen oxides for the entire source do not exceed one hundred (100) tons per twelve (12) consecutive month period by maintaining fuel usage and NO<sub>x</sub> emission data.

These monitoring conditions are necessary because the furnace must operate properly using natural gas and low sulfur fuel oil to ensure compliance with 326 IAC 6-3 (Process Operations), 326 IAC 6-1-17, 326 IAC 7-1.1-1, and 326 IAC 2-7 (Part 70). For 326 IAC 2-3 (Emission Offset) to be not applicable, the Permittee must demonstrate that nitrogen oxide emissions from the furnace and other NO<sub>x</sub> emission sources are controlled by limiting the burning of natural gas and low sulfur fuel oil such that the potential to emit nitrogen oxide is less than 100 tons per twelve consecutive month period.

- (d) The storage and conveying of sand, soda ash, aluminum trihydrate, sodium silicate, and sodium aluminosilicate have applicable compliance monitoring conditions as specified below:
- (1) Daily visible emissions notations of exhaust from stacks S-3, S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, and S-12 shall be performed during normal daylight operations. A trained employee will record whether emissions are normal or abnormal. For processes operated continuously "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the

process is in operation, not counting startup or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions. A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

- (2) The Permittee shall record the total static pressure drop across the baghouses controlling the storage and conveying of sand, soda ash, aluminum trihydrate, sodium silicate and sodium aluminosilicate at least once daily when the sodium silicate and sodium aluminosilicate manufacturing facility is in operation. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across the baghouses shall be maintained within the range of 3.0 to 6.0 inches of water or a range established during the latest stack test. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading.
- (3) In the event that bag failure has been observed:
  - (A) The affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) hours of discovery of the failure and shall include a timetable for completion. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).
  - (B) For single compartment baghouses, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

These monitoring conditions are necessary because the baghouses for the material storage and conveying systems must operate properly to ensure compliance with 326 IAC 6-3 (Process Operations) and 326 IAC 2-7 (Part 70).

## Conclusion

The operation of this sodium silicate and sodium aluminosilicate manufacturing facility shall be subject to the conditions of the attached proposed Part 70 Permit No. T019-7718-00018.

**Appendix A: Emissions Calculations**  
**Natural Gas-Fired Dryer**

**Company Name:** PQ Corporation  
**Address City IN Zip:** Jeffersonville, IN 47130  
**Part 70 Permit:** T019-7718-00018  
**Plt ID:** 00018  
**Reviewer:** ERG/AB  
**Date:** 06/8/01

Heat Input Capacity  
MMBtu/hr

Potential Throughput  
MMCF/yr

10.0

87.6

| Emission Factor in lb/MMCF    | Pollutant |       |      |             |      |      |
|-------------------------------|-----------|-------|------|-------------|------|------|
|                               | PM*       | PM10* | SO2  | NOx         | VOC  | CO   |
|                               | 7.6       | 7.6   | 0.6  | 100.0       | 5.5  | 84.0 |
| Potential Emission in tons/yr | 0.33      | 0.33  | 0.03 | **see below | 0.24 | 3.68 |

\*PM emission factor is filterable and condensable PM.

\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

### Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 2 for HAPs emissions calculations.

**Appendix A: Emissions Calculations  
Natural Gas-Fired Dryer**

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**HAPs Emissions**

**Company Name:** PQ Corporation  
**Address City IN Zip:** Jeffersonville, IN 47130  
**CP:** T019-7718-00018  
**Plt ID:** 00018  
**Reviewer:** ERG/AB  
**Date:** 06/8/01

**HAPs - Organics**

| Emission Factor in lb/MMcf    | Benzene<br>2.1E-03 | Dichlorobenzene<br>1.2E-03 | Formaldehyde<br>7.5E-02 | Hexane<br>1.8E+00 | Toluene<br>3.4E-03 |
|-------------------------------|--------------------|----------------------------|-------------------------|-------------------|--------------------|
| Potential Emission in tons/yr | 9.198E-05          | 5.256E-05                  | 3.285E-03               | 7.884E-02         | 1.489E-04          |

**HAPs - Metals**

| Emission Factor in lb/MMcf    | Lead<br>5.0E-04 | Cadmium<br>1.1E-03 | Chromium<br>1.4E-03 | Manganese<br>3.8E-04 | Nickel<br>2.1E-03 |
|-------------------------------|-----------------|--------------------|---------------------|----------------------|-------------------|
| Potential Emission in tons/yr | 2.190E-05       | 4.818E-05          | 6.132E-05           | 1.664E-05            | 9.198E-05         |

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.  
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emissions Calculations**  
**Material Storage and Handling**

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**Company Name: PQ Corporation**  
**Address City IN Zip: Jeffersonville, IN 47130**  
**Part 70 Permit: T019-7718-00018**  
**Plt ID: 00018**  
**Reviewer: ERG/AB**  
**Date: 06/8/01**

| <b>Material Handling</b>     | <b>Emission Factor (lbs/ton)</b> | <b>Maximum Quantity of Material (lbs/hour)</b> | <b>Maximum Uncontrolled PM Emissions (tons/year)</b> | <b>Collection Efficiency of Baghouses (%)</b> | <b>Maximum Controlled PM Emissions (tons/year)</b> |
|------------------------------|----------------------------------|------------------------------------------------|------------------------------------------------------|-----------------------------------------------|----------------------------------------------------|
| Soda Ash                     | 3.00                             | 6,700                                          | 44.02                                                | 99.90%                                        | 0.044                                              |
| Sand                         | 3.00                             | 100,000                                        | 657.00                                               | 99.90%                                        | 0.657                                              |
| Aluminum Trihydrate          | 3.00                             | 67,000                                         | 440.19                                               | 99.90%                                        | 0.440                                              |
| Sodium Aluminosilicate       | 3.00                             | 70,000                                         | 459.90                                               | 99.90%                                        | 0.460                                              |
| Sodium Silicate (briquettes) | 3.00                             | 67,000                                         | 440.19                                               | 99.90%                                        | 0.440                                              |
| <b>Total</b>                 |                                  |                                                | <b>2,041.30</b>                                      |                                               | <b>2.04</b>                                        |

**Methodology :**

Emission factor from AP-42, Chapter 11.13, Table 11.13-2, SCC 3-05-012-21.

Uncontrolled Emissions (tons/yr) = Maximum Material Throughput (tons/yr) \* Emission Factor (lbs/ton) \* 1 ton/2000lbs.

Controlled Emissions (tons/yr) = Maximum Material Throughput (tons/yr) \* Emission Factor (lbs/ton) \* Collection Efficiency (%) \* 1 ton/2000 lbs.

## Appendix A: Emissions Calculations

### Natural Gas Combustion Only

MM BTU/HR <100

### Two Small Industrial Boilers

Company Name: PQ Corporation

Address City IN Zip: Jeffersonville, IN 47130

Part 70 Permit: T019-7718-00018

Plt ID: 00018

Reviewer: ERG/AB

Date: 06/8/01

Heat Input Capacity  
MMBtu/hr

Potential Throughput  
MMCF/yr

35.0

306.6

| Emission Factor in lb/MMCF    | Pollutant |       |      |             |      |       |
|-------------------------------|-----------|-------|------|-------------|------|-------|
|                               | PM*       | PM10* | SO2  | NOx         | VOC  | CO    |
|                               | 7.6       | 7.6   | 0.6  | 100.0       | 5.5  | 84.0  |
| Potential Emission in tons/yr | 1.17      | 1.17  | 0.09 | **see below | 0.84 | 12.88 |

\*PM emission factor is filterable and condensable PM. PM10 emission factor is filterable and condensable PM10 combined.

\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

### Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 2 for HAPs emissions calculations.

**Appendix A: Emissions Calculations  
Natural Gas Combustion Only**

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**MM BTU/HR <100**

**Two Small Industrial Boilers**

**HAPs Emissions**

**Company Name: PQ Corporation**

**Address City IN Zip: Jeffersonville, IN 47130**

**Part 70 Permit: T019-7718-00018**

**Plt ID: 00018**

**Reviewer: ERG/AB**

**Date: 06/8/01**

**HAPs - Organics**

| Emission Factor in lb/MMcf    | Benzene<br>2.1E-03 | Dichlorobenzene<br>1.2E-03 | Formaldehyde<br>7.5E-02 | Hexane<br>1.8E+00 | Toluene<br>3.4E-03 |
|-------------------------------|--------------------|----------------------------|-------------------------|-------------------|--------------------|
| Potential Emission in tons/yr | 3.219E-04          | 1.840E-04                  | 1.150E-02               | 2.759E-01         | 5.212E-04          |

**HAPs - Metals**

| Emission Factor in lb/MMcf    | Lead<br>5.0E-04 | Cadmium<br>1.1E-03 | Chromium<br>1.4E-03 | Manganese<br>3.8E-04 | Nickel<br>2.1E-03 |
|-------------------------------|-----------------|--------------------|---------------------|----------------------|-------------------|
| Potential Emission in tons/yr | 7.665E-05       | 1.686E-04          | 2.146E-04           | 5.825E-05            | 3.219E-04         |

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.

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**Appendix A: Emissions Calculations**  
**Commercial/Institutional/Residential Combustors (< 100 mmBtu/hr)**  
**Combustion of #2 Fuel Oil in Two 17.5 MMBtu/hour Boilers**

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**Company Name:** PQ Corporation  
**Address, City IN Zip:** Jeffersonville, IN 47130  
**Part 70 Permit #:** 019-7718-00018  
**Plt ID:** 00018  
**Reviewer:** ERG/AB  
**Date:** 06/8/01

|                                 |                                    |                            |
|---------------------------------|------------------------------------|----------------------------|
| Heat Input Capacity<br>MMBtu/hr | Potential Throughput<br>kgals/year | S = Weight % Sulfur<br>0.5 |
| 35                              | 2190                               |                            |

| Emission Factor in lb/kgal    | Pollutant |                 |                 |      |     |
|-------------------------------|-----------|-----------------|-----------------|------|-----|
|                               | PM*       | SO <sub>2</sub> | NO <sub>x</sub> | VOC  | CO  |
|                               | 3.3       | 71<br>(142.0S)  | 20.0            | 0.34 | 5.0 |
| Potential Emission in tons/yr | 3.6       | 77.7            | 21.9            | 0.4  | 5.5 |

**Methodology**

1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu

Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.140 MM Btu

Emission Factors are from AP 42, Tables 1.3-1, 1.3-2, and 1.3-3 (SCC 1-03-005-01/02/03) Supplement E 9/98 (see erata file)

\*PM emission factor is for condensable and filterable PM.

Emission (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton

See page 2 for HAPs emission calculations.

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**Appendix A: Emissions Calculations**  
**Commercial/Institutional/Residential Combustors (< 100 mmBtu/hr)**  
**Combustion of #2 Fuel Oil in Two 10MMBtu/hour Boilers**  
**HAPs Emissions**

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**Company Name: PQ Corporation**  
**Address, City IN Zip: Jeffersonville, IN 47130**  
**Part 70 Permit #: 019-7718-00018**  
**Plt ID: 00018**  
**Reviewer: ERG/AB**  
**Date: 06/8/01**

HAPs - Metals

|                               |                    |                      |                    |                     |                 |
|-------------------------------|--------------------|----------------------|--------------------|---------------------|-----------------|
| Emission Factor in lb/mmBtu   | Arsenic<br>4.0E-06 | Beryllium<br>3.0E-06 | Cadmium<br>3.0E-06 | Chromium<br>3.0E-06 | Lead<br>9.0E-06 |
| Potential Emission in tons/yr | 6.13E-04           | 4.60E-04             | 4.60E-04           | 4.60E-04            | 1.38E-03        |

HAPs - Metals (continued)

|                               |                    |                      |                   |                     |
|-------------------------------|--------------------|----------------------|-------------------|---------------------|
| Emission Factor in lb/mmBtu   | Mercury<br>3.0E-06 | Manganese<br>6.0E-06 | Nickel<br>3.0E-06 | Selenium<br>1.5E-05 |
| Potential Emission in tons/yr | 4.60E-04           | 9.20E-04             | 4.60E-04          | 2.30E-03            |

Methodology

No data was available in AP-42 for organic HAPs.

Potential Emissions (tons/year) = Throughput (mmBtu/hr)\*Emission Factor (lb/mmBtu)\*8,760 hrs/yr / 2,000 lb/ton

**Appendix A: Emissions Calculations  
Melting Furnace**

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**Company Name: PQ Corporation  
Address, City IN Zip: Jeffersonville, 47130  
Part 70 Permit #: 019-7718-00018  
Plt ID: 00018  
Reviewer: ERG/AB  
Date: 06/8/01**

Maximum Glass Processing Rate                      3.5 tons/hour  
Heat Input Capacity (MMBtu/hr)                      19.7 MMBtu/hour

| Pollutant | Natural Gas Fired Furnace* |                               | Natural Gas Combustion** |                               | No. 4 Fuel Oil Combustion*** |                               | Oil Fired Furnace****         |
|-----------|----------------------------|-------------------------------|--------------------------|-------------------------------|------------------------------|-------------------------------|-------------------------------|
|           | Emission Factor (lb/ton)   | Potential Emissions (tons/yr) | Emission Factor (lb/ton) | Potential Emissions (tons/yr) | Emission Factor (lb/K.gal)   | Potential Emissions (tons/yr) | Potential Emissions (tons/yr) |
| PM        | 1.4                        | 21.2                          | 7.6                      | 0.5                           | 7.0                          | 4.1                           | 24.8                          |
| PM10      | 1.33                       | 20.1                          | 7.6                      | 0.5                           | 7.0                          | 4.1                           | 23.7                          |
| SO2       | 3.4                        | 51.5                          | 0.6                      | 0.0                           | 75.0                         | 44.3                          | 95.8                          |
| VOC       | 0.2                        | 3.0                           | 5.5                      | 0.4                           | 0.2                          | 0.1                           | 2.7                           |
| CO        | 0.2                        | 3.0                           | 84.0                     | 6.0                           | 5.0                          | 3.0                           | 3.0                           |

**Methodology**

**\* Natural Gas Fired Furnace**

Emission Factors are from AP 42, Chapter 11.15, Tables 11.15-1, 11.15-2, and 11.15-3 (AP 42 10/86)

Emissions (tons/year) = Maximum Glass Processing Rate (tons/hour) \* Emission Factor (lb/ton) \* 8760 hours/year/2000 lb/ton

**\*\* Natural Gas Combustion**

PM emission factor is condensable and filterable PM.

Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03

(SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

**\*\*\* No. 4 Fuel Oil Combustion**

1 gallon of #4 Fuel oil has a heating value of 146,000 Btu

Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.146 MMBtu

Emission Factors are from AP 42 Tables 1.3-1, 1.3-2 and 1.3-3 (SCC 1-03-004-02/03, 1-02-004-02/03, and 1-03-004-04)

(AP-42 Supplement E 9/98)

Emission (tons/yr) = Throughput (kgals/year) x Emission Factor (lb/kgal)/2,000 lb/ton

**\*\*\*\* Oil Fired Furnace**

Emissions (tons/year) = Emissions from Natural Gas fired furnace (tons/year) - Emissions from Gas Combustion (tons/year) + Emissions from No.4 Oil Combustion (tons/year)

CO emissions for oil fired furnace were estimated using the potential emissions calculated for the gas fired furnace

**Appendix A: Emissions Calculations**  
**NOx Emissions from the Furnace**

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**Company Name:** PQ Corporation  
**Address City IN Zip:** Jeffersonville, IN 47130  
**Part 70 Permit:** T019-7718-00018  
**Plt ID:** 00018  
**Reviewer:** ERG/AB  
**Date:** 06/8/01

| Type of Fuel Burned              | Natural Gas | Fuel Oil** |
|----------------------------------|-------------|------------|
| Emission Factor in lbs/hour      | 21.5        | 14.42      |
| Potential Emissions in tons/year | 94.17       | 63.11      |

**Methodology :**

NOx emission factors are based on stack tests performed by PQ Corporation in September 1998 and February 1999.

Potential Emissions (tons/year) = Emission Factor (lbs/hr) \* 8760 hours/year \* 1ton/2000 lbs.

\*\* consisted of 80% No. 4 Fuel oil and 20% No. 2 fuel oil.

**Appendix A: Emissions Calculations**  
**Commercial/Institutional/Residential Combustors (< 100 mmBtu/hr)**  
**Combustion of #4 Fuel Oil in Two 17.5 MMBtu/hour Boilers**

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**Company Name:** PQ Corporation  
**Address City IN Zip:** Jeffersonville, IN 47130  
**Permit No.:** T019-7718-00018  
**Plt ID:** 00018  
**Reviewer:** ERG/AB  
**Date:** 06/8/01

|                                 |                                    |                     |
|---------------------------------|------------------------------------|---------------------|
| Heat Input Capacity<br>MMBtu/hr | Potential Throughput<br>kgals/year | S = Weight % Sulfur |
| 35.00                           | 2100                               | 0.5                 |

| Emission Factor in lb/kgal    | Pollutant |              |      |      |     |
|-------------------------------|-----------|--------------|------|------|-----|
|                               | PM*       | SO2          | NOx  | VOC  | CO  |
|                               | 7         | 75<br>(150S) | 20.0 | 0.20 | 5.0 |
| Potential Emission in tons/yr | 7.4       | 78.8         | 21.0 | 0.2  | 5.3 |

\*PM emission factor is filterable PM only. Condensable PM emission factor is 1.5 lb/kgal.

**Methodology**

1 gallon of #4 Fuel oil has a heating value of 146,000 Btu

Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.146 MMBtu

Emission Factors are from AP 42 Tables 1.3-1, 1.3-2 and 1.3-3 (SCC 1-03-004-02/03, 1-02-004-02/03, and 1-03-004-04)  
 (AP-42 Supplement E 9/98)

Emission (tons/yr) = Throughput (kgals/year) x Emission Factor (lb/kgal)/2,000 lb/ton

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

No data are available for HAPs emissions calculations for #4 Fuel oil.

## Appendix B

### BACT Analysis for The Regenerative Furnace

IDEM searched EPA's RACT/BACT/LAER Clearinghouse (RBLC) to identify sources with furnaces similar to the furnace at PQ Corporation's Jeffersonville plant. The RBLC database was searched using the Standard Industrial Classification (SIC) Code of 2819 (Industrial Inorganic Chemicals). Since the furnace is similar to those used in glass manufacturing, IDEM, OAQ also searched the database using the SIC codes 3221 (Glass Container), 3229 (Pressed and Blown Glass), and 3211 (Flat Glass). The search identified the following sources:

| SIC Code | Source Name                                   | RBLC ID | Process                  | BACT                                                                   | Comments                 |
|----------|-----------------------------------------------|---------|--------------------------|------------------------------------------------------------------------|--------------------------|
| 2819     | PQ Corporation, Gurnee, IL                    | IL-0063 | Sodium Silicate Furnaces | Low NOx combustion technologies                                        | PSD-BACT (50% Efficient) |
| 3211     | Guardian Industries, Dewitt, IA               | IA-0027 | Glass Furnace            | Minimize furnace temperature and excess air, low NOx burners, and SNCR | PSD-BACT (35% Efficient) |
| 3211     | PPG Industries, Mt. Zion, IL                  | IL-0050 | Glass Furnace            | Furnace design optimization                                            | PSD-BACT (50% Efficient) |
| 3211     | Guardian Industries, Geneva, NY               | NY-0084 | Glass Furnace            | Low NOx burners developed by Pilkington Glass                          | LAER                     |
| 3211     | Cardinal Flat Glass, Portage, WI              | WI-0083 | Glass Furnace            | Proper furnace design                                                  | PSD-BACT                 |
| 3221     | Owens-Brockway Glass Containers, Atlanta, GA  | GA-0061 | Glass Furnace            | Furnace design and low NOx burners                                     | RACT (67% Efficient)     |
| 3229     | American Video Glass (SONY), Mt. Pleasant, PA | PA-0135 | Glass Furnace            | Oxy-firing                                                             | LAER                     |

Based on the results from the RBLC database search and a review of the control technologies described in EPA's *Alternate Control Techniques Document - NOx Emissions From Glass Manufacturing*, IDEM has identified three approaches for controlling NOx emissions from melting furnaces:

- (1) Combustion modifications
- (2) Process modifications
- (3) Post-combustion modifications

#### **Combustion Modifications :**

Combustion modifications include (1) low excess air (LEA) operation; (2) low NOx burners (LNBs); (3) modified burners; (4) oxygen-enriched air staging (OEAS); and (5) Oxygen enrichment/oxy-firing systems.

- (1) LEA is designed to reduce the oxygen concentration in the flame zone and thereby reduce NOx formation. This technology may reduce NOx emissions by as much as 28% in glass furnaces. PQ Corporation estimates that LEA reduces NOx emissions from their sodium silicate furnace by approximately 15 percent. This technology is technically feasible.
- (2) LNBs are designed to achieve a 30 to 40 percent reduction in NOx emissions. The burners have partitioned air and fuel flow fields that are controlled to achieve an air/fuel ratio that results in lower NOx emissions. LNBs have longer flames to reduce the peak flame temperature. This technology is technically feasible.
- (3) Modified burners are existing burners that have been changed to reduce NOx emissions. NOx emissions are reduced by changing the contact angle between the gas and combustion air, varying the air and gas velocities, and altering the location of gas injection. The burners are also sealed to prevent infiltration of excess air at the flame. These modifications produce long luminous flames, which have lower peak flame temperatures and shorter gas residence times. The modified burners are comparable to LNBs and result in NOx reductions of 30 to 40 percent. This technology is technically feasible.
- (4) OEAS systems create an oxygen-deficient flame by removing a portion of the hot combustion air that is normally supplied to the burners by an oxygen-driven aspirator. This inhibits the formation of NOx and reduces NOx emissions by 30 to 40 percent. This technology is technically feasible.
- (5) Oxygen enrichment is designed to substitute oxygen for nitrogen in the combustion air used to burn the fuel. Oxygen enrichment above 90% is referred to as oxy-firing. The control efficiency for oxygen enrichment methods is between 80 and 85 percent depending on the oxygen content. This technology is technically feasible.

#### **Process Modifications :**

Process modifications include (1) Teichmann system; (2) pre-heating of raw materials; and (3) electric furnaces.

- (1) The Teichmann system preheats the air and fuel prior to combustion using a convection recuperator. The exhaust from the burners passes over the melt, through radiation and convection recuperators, through a crossflow cullet preheater, and exhausts through the stack. Teichmann does not recommend this technology be used in sodium silicate furnaces.
- (2) Pre-heating of raw materials is a method which saves energy by using recovered heat from the flue gas to heat the raw materials. This method reduces NOx emissions by 8 to 12 percent. Pre-heating has been used in container glass furnaces but not in a sodium silicate furnace. Differences in raw material handling may make pre-heating impractical for this industry.
- (3) Electric furnaces or electric boost furnaces pass electricity through electrodes submerged in the sodium silicate melt. This method reduces NOx emissions by reducing the amount of fuel burned. This technology is considered to be technically infeasible because the entire furnace would have to be replaced.

#### **Post-Combustion Modifications:**

Post-combustion modifications include selective catalytic reduction (SCR) and selective noncatalytic reduction (SNCR) control technologies.

- (1) SCR reduces NOx emissions by reacting NOx with ammonia in the presence of a catalyst. This control technology can reduce NOx emissions by 70 to 90 percent. Although this technology has been used on a number of utility boilers, gas turbines, internal combustion engines and process heaters, there are no reported uses of SCRs on sodium silicate furnaces. PQ believes that this technology would be technically infeasible due to catalyst fouling problems.
- (2) SNCR reduces NOx emissions by reacting NOx with ammonia (or other alkaline agent) at high temperatures. The reaction typically takes place between 1600 and 2000 degrees Fahrenheit. The temperature can be lowered to 1300 to 1700 degrees Fahrenheit if hydrocarbons are added to the gas stream. This control technology can reduce NOx emissions by 30 to 60%. There are currently three SNCR systems available: Exxon Thermal DeNOx, Nalco Fuel Tech NOxOUT, and PPG Industries Patented Design. The PPG system is the only one that has been applied to a regenerative glass furnace and is the only system considered to be technically feasible for a regenerative furnace.

### **Conclusions :**

Although oxygen enrichment represents the most effective method to reduce NOx emissions from the furnace, the capital and operating costs are high. The cost effectiveness of this technology is estimated to be \$8,998 per ton of NOx removed. This cost is more than double that of LNBs (\$3,781/ton NOx), OEAS (\$2,841/ton NOx), LEA (\$253/ton NOx), and batch pre-heating (\$3,768/ton NOx). LEA has been shown to reduce NOx emissions in glass furnaces by as much as 28% and is the most cost effective of the options. OEAS, LNBs, and modified burners are considered to be comparable technologies, because each can reduce NOx emissions by 30 to 40%. Although all of these methods are technically and economically feasible, PQ Corporation prefers to use modified burners rather than OEAS because they have successfully used modified burners at their Gurnee, Illinois plant. SNCR can reduce NOx emissions by 30 to 60 percent; however the cost effectiveness is relatively high at \$4,826 /ton NOx. A combination of either LNBs, modified burners or OEAS with LEA would achieve reductions in NOx emissions comparable to SNCR at far lower cost. The Teichmann system, electric/electric boost furnaces, and SCR control technology are considered to be impractical for application in a silicate regenerative furnace. Pre-heating of raw materials has not been implemented in the sodium silicate manufacturing industry and may not be practical due to differences in handling practices.

Based on these considerations, IDEM has determined that BACT for PQ Corporation's furnace will be modified burners and LEA. IDEM's search of the RBLC database shows that these technologies have previously been determined to be BACT for furnaces at several glass manufacturing plants and at PQ Corporation's plant in Gurnee, Illinois. Although an SNCR system is used at the Guardian Industries plant in Dewitt, Iowa, the furnaces at this plant are thought to be non-regenerative. The oxy-firing system used at the American Video Glass plant in Mt. Pleasant, Pennsylvania was adopted as the more stringent LAER.